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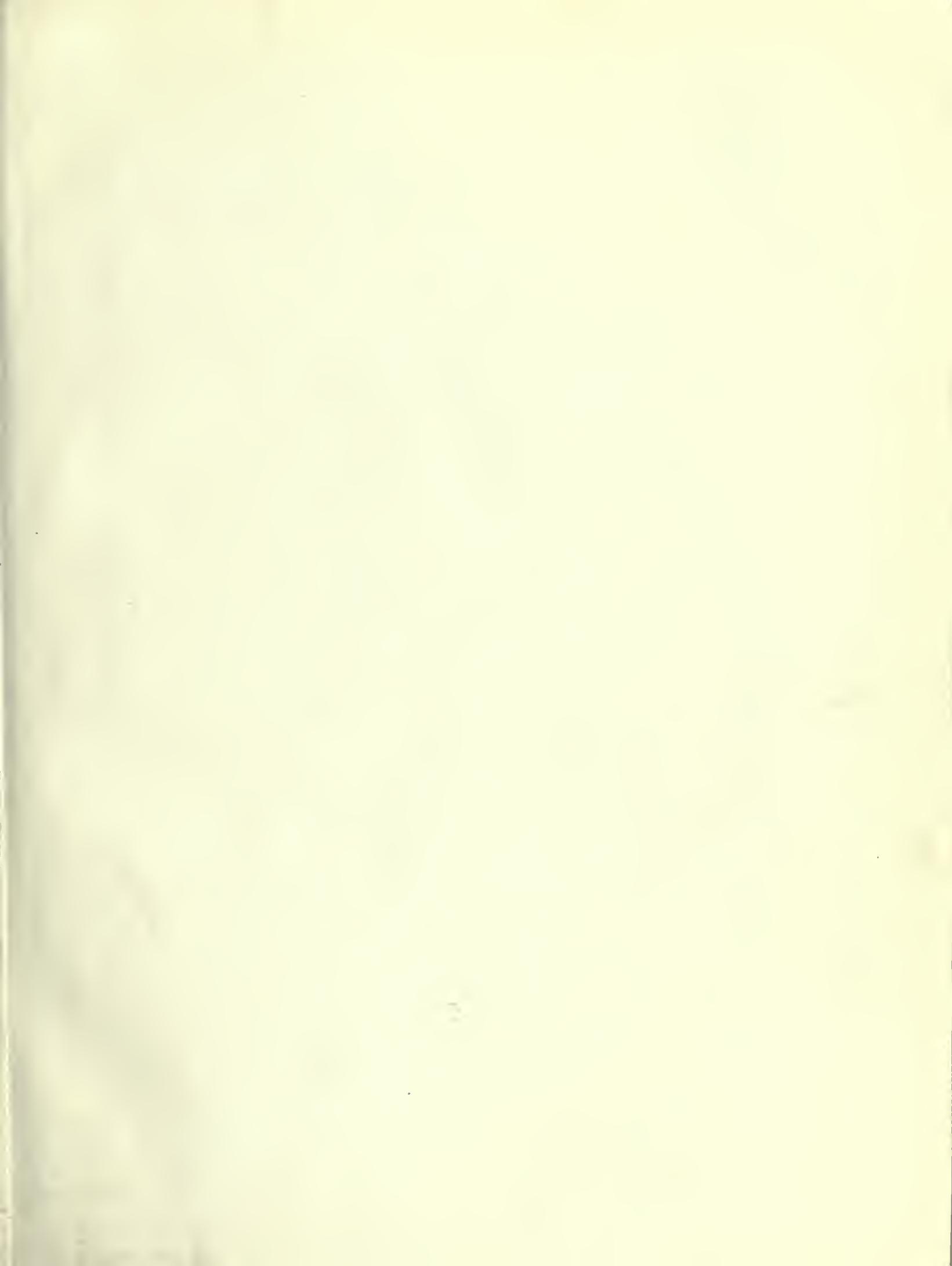


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REPORT

ON THE

POPULATION, INDUSTRIES, AND RESOURCES OF ALASKA.

BY

IVAN PETROFF,
SPECIAL AGENT.

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LETTER OF TRANSMITTAL.

WASHINGTON, D. C., August 7, 1882.

Hon. CHARLES W. SEATON,

Superintendent of Census.

SIR: In obedience to my instructions of April 20, 1880, under which I was directed to ascertain and report as far as possible the number of inhabitants of each geographical division of the Alaskan district, with an account of the occupations, modes of subsistence of the people, their dietary, dress, etc., indicating a proportional consumption of domestic and imported articles; their religious and educational institutions, with all statistical information relative thereto which might be available, together with such matters of economical and social importance as should seem to me to fall within the scope of my labors, I have the honor to report that during the seasons of 1880 and 1881 I made an extended exploration of the greater part of Alaska and a careful enumeration of its people, collecting at the same time facts and statistics bearing upon their past and present condition and the volume of trade in that region.

The immense extent of country contained in the district made it impossible for me to visit every section in person, even in two summers, but the population statistics of regions beyond my reach I have obtained from the most reliable sources. The people of the Arctic coast down to King's island, in Bering sea, were enumerated by Captain E. E. Smith, a whaling master of long experience, speaking the Inuit tongue, who accompanied the United States steamer Thomas Corwin on her Arctic cruise in 1880 in the capacity of ice pilot. Most of his figures are from actual count.

For the enumeration of the coast people from King's island to the mouth of the Kuskokwim river, and of the inhabitants of the Yukon delta, I am indebted to Mr. E. W. Nelson, United States signal service, who obtained his figures by actual count during a series of sledge journeys through all that region. The same gentleman has also furnished me with much statistical information of great value.

The enumeration of the people of the Yukon river and its tributaries beyond the points reached by me during my journey of 1880 was obtained, with the assistance of the traders, Messrs. Harper, Mayo, and McQueston, from chiefs and other prominent natives of the various settlements during their annual visit to the coast.

At all places visited by me in person I succeeded in making an actual count. Having obtained the official returns of the church authorities within the area claimed by the various parishes and missions of the Russian church, I compared these with my own enumeration. I also compared the parish returns with the local registers kept by the "reader", or church representative, in each Christian village. The official returns of the Russian church were furnished me by the Rev. Zakhari Belkov, missionary of the Kvichak mission (Yukon river); Rev. Peter Shishkin, missionary of the Nushegak mission (Bristol bay); Rev. Father Nikita, missionary of the Kenai mission (Cook's inlet); Rev. Nikolai Rissof, of Kodiak parish; Rev. Moses Salamatof, of Belkovsky parish; and Rev. Innokenty Shaishnikof, of Oonalashka parish. The returns of the Russian parish of Sitka, in southeastern Alaska, were obtained from the Russian consistory of San Francisco, California, through the courtesy of Bishop Nestor, of the diocese of Alaska.

The enumeration of the people of southeastern Alaska, which region I failed to visit in person, was made by Mr. Alexander Militich, who was appointed a special agent of the Tenth Census by the Superintendent upon the recommendation of the collector of customs in Sitka. As far as I have been able to check Mr. Militich's figures of population by comparison with later counts made by the naval authorities at Sitka I have found them correct, and therefore feel justified in accepting his enumeration as a whole.

LETTER OF TRANSMITTAL.

Of the commercial, industrial, and mining statistics of southeastern Alaska I was unable to obtain much satisfactory information, owing to an apparent disinclination on the part of the majority of the business men to furnish the same. My inquiries by letter were answered with glowing statements of what the country would be in the near future, but as to the state of affairs at the time of writing my informants were silent.

For information concerning the educational and religious establishments in southeastern Alaska under control of the Presbyterian board of missions I am indebted to Rev. Sheldon Jackson, D. D.

Throughout the west and north of Alaska I was assisted and aided in my researches, and in my progress through the country on land and water, by the agents and traders of the Alaska Commercial Company and of the Western Fur and Trading Company, both of San Francisco, California. This assistance was of the greatest importance to me; in fact, without it I could not have accomplished my exploration.

Through the kindness of Mr. E. W. Nelson (by permission of General William B. Hazen, Chief Signal Officer, United States army) and of Captain Calvin L. Hooper, United States revenue marine, I have obtained important geographical data, which, together with the notes of my own observations, enabled me to compile a new map of Alaska. During the progress of this work I have also profited by the favors of the United States coast and geodetic survey and the United States hydrographic office in the shape of the latest geographical corrections. All the ancient and modern maps and charts (Russian, English, French, and American) accessible to me have been consulted, and the various authorities duly examined and compared, and I trust that the result will be a map of Alaska more accurate both in contour and detail than any heretofore published. Mr. Henry Gannett, geographer of the Tenth Census, has kindly superintended the technical execution of the work.

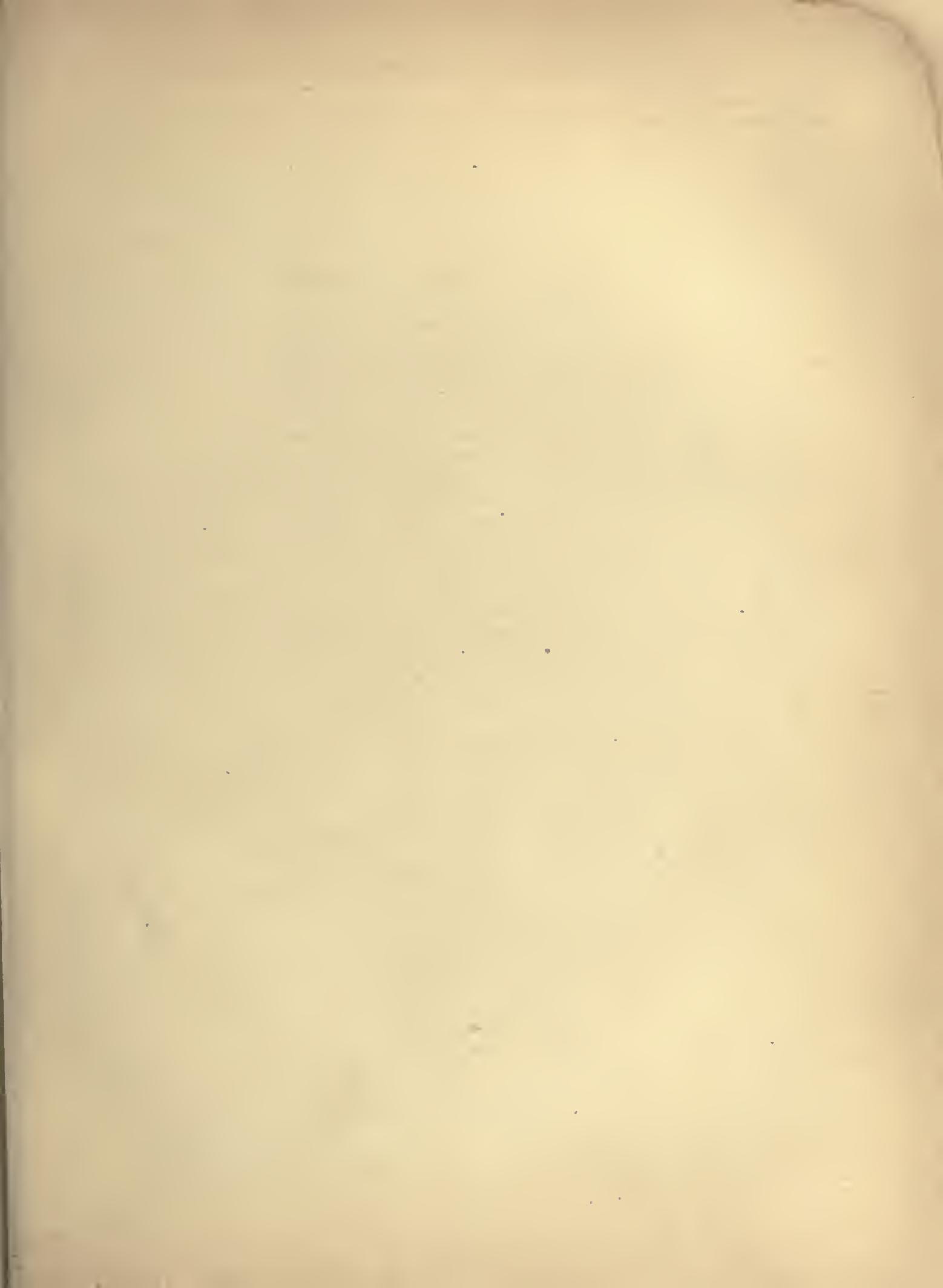
In addition to this general map, I have prepared special maps, showing the distribution of native tribes, of timber, and of the various fur-bearing animals of Alaska. On the latter point I have received the most valuable assistance from traders and others acquainted with the resources of the country.

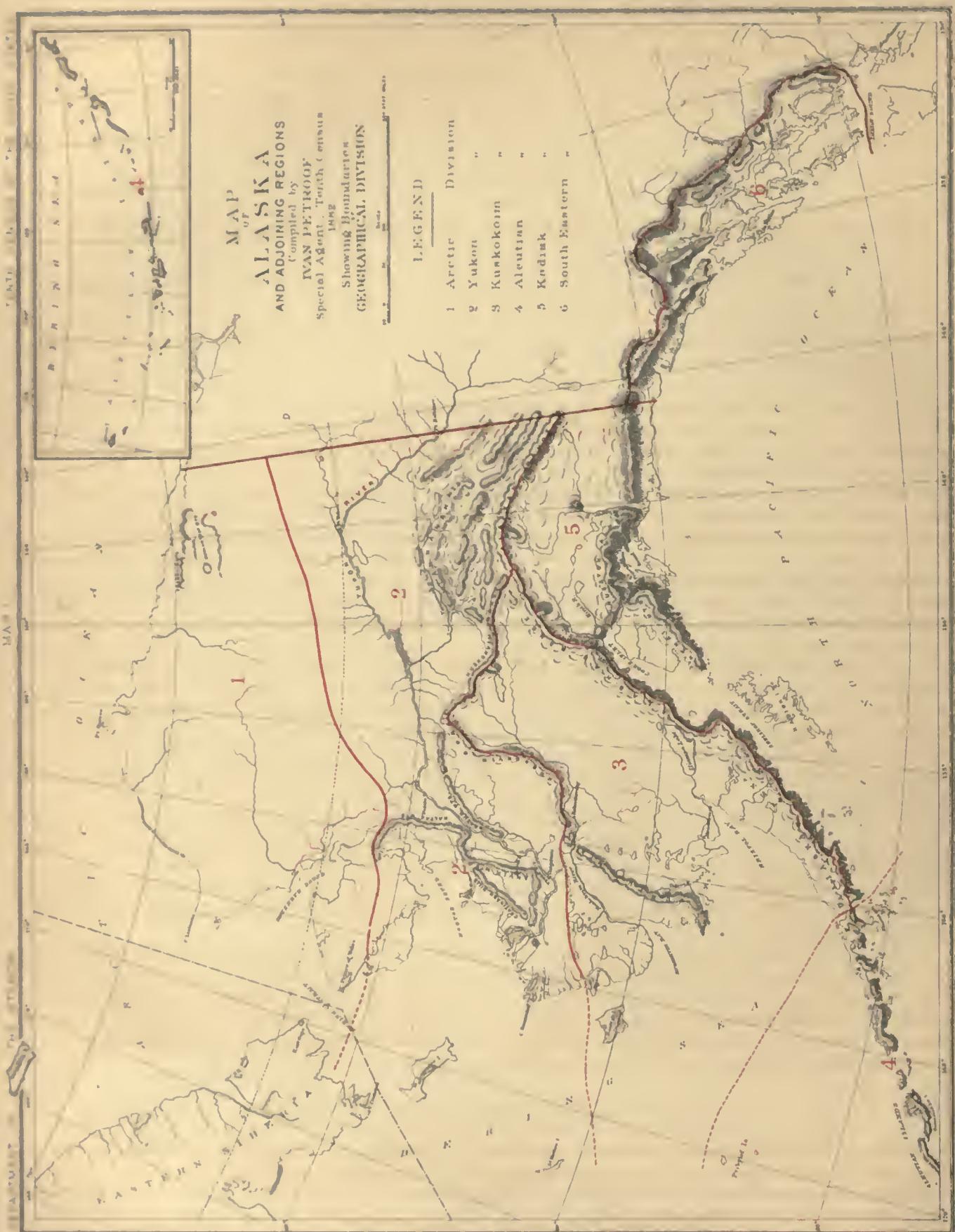
In arranging my work, the result of my own observations as well as of researches in public and department libraries, archives, etc., I have found it most convenient to divide my report into the following heads:

1. A brief statistical review of Alaska in geographical divisions, with tables of population, statistics, etc.
2. A review of the fur trade, fisheries, mineral, and agricultural resources in the past and present.
3. The geography and topography of Alaska.
4. An historical sketch of Alaska from its discovery to the year 1880.
5. Notes on Alaskan ethnology.

I have the honor to be, very respectfully, your obedient servant,

IVAN PETROFF,
Special Agent.





CHAPTER I.—STATISTICAL REVIEW BY GEOGRAPHICAL DIVISIONS.

For the purposes of this report it has been found most convenient to divide Alaska into six geographical divisions, as follows:

1. The Arctic division, containing 125,245 square miles, and comprising all that portion of the North American continent between the one hundred and forty-first meridian in the east and cape Prince of Wales, or Bering strait, in the west, the Arctic ocean in the north, and having for its southern boundary a line indicating the water-shed between the Yukon River system and the streams emptying into the Arctic and impinging upon the coast of Bering sea just north of Port Clarence.

2. The Yukon division, containing 176,715 square miles, and comprising the valley of the Yukon river as far as it lies within our boundaries and its tributaries from the north and south. This division is bounded by the Arctic division in the north, the one hundred and forty-first meridian in the east, and Bering sea in the west. The southern boundary lies along a line indicating the water-shed between the Yukon and the Kuskokwim, Susitna, and Copper rivers, and runs from the above-mentioned meridian in the east to the coast of Bering sea, in the vicinity of Hazel bay, in the west. The island of Saint Lawrence, in Bering sea, is included in this division.

3. The Kuskokwim division, containing 114,975 square miles, bounded on the north by the Yukon division, and comprising the valleys of the Kuskokwim, the Togiak, and the Nushagak rivers, and the intervening system of lakes. The eastern boundary of this division is a line running along the main Alaskan range of mountains from the divide between the Kuskokwim and Tanaanah rivers down to the low, narrow isthmus dividing Moller bay from Zekharof bay, on the Aliaska peninsula. Bering sea washes the whole west and south coasts of this division, which also includes Nuuivak island.

4. The Aleutian division, containing 14,610 square miles, and comprising the Aliaska peninsula westward of the isthmus between Moller and Zekharof bays and the whole chain of islands from the Shmagin group in the east to Attoo in the west, including also the Pribilof or Fur-Seal islands.

5. The Kodiak division, containing 70,884 square miles, and comprising the south coast of the Aliaska peninsula down to Zekharof bay, with the adjacent islands, the Kodiak group of islands, the islands and coasts of Cook's inlet, the Kenai peninsula, and Prince William sound, with the rivers running into them. The main Alaskan range bounds this division in the north and west. Its eastern limit is the one hundred and forty-first meridian, which intersects the coast-line in the vicinity of Mount Saint Elias, while the south shores of the division are washed by that section of the North Pacific named the Gulf of Alaska.

6. The southeastern division, containing 28,980 square miles, and comprising the coast from Mount Saint Elias in the north to Portland canal, in latitude $54^{\circ} 40'$, in the south, together with the islands of the Alexander archipelago between Cross sound and cape Fox. The eastern boundary of this division is the rather indefinite line established by the Anglo-Russian and Russian-American treaties of 1824 and 1825 respectively, following the summits of a chain of mountains supposed to run parallel with the coast at a distance not greater than three marine leagues from the sea between the head of Portland canal and Mount Saint Elias.

THE ARCTIC DIVISION.

Situated, as it is, almost entirely above the Arctic circle, this division is known to us only from observations made on the sea-coast. The vast interior, consisting probably of frozen moors and low ranges of hills, intersected here and there by shallow, sluggish streams, remains entirely unknown. We may presume that the reindeer find a refuge here from the constant persecution of the coast people or Arctic Eskimo on one side and of the Yukon River people on the other. Statements have been made by natives of the latter region to the effect that routes of travel are in existence connecting the river settlements with those on the Arctic, but nothing definite can be

ascertained concerning them with the exception of the general and well-established route of traffic between the Koynuk, a northern tributary of the Yukon, and the settlements on Kotzebue sound; and even this has never been traversed by a white man. Lieutenant Zagoskin, of the Russian navy, made the attempt nearly forty years ago, but failed, reaching merely the headwaters of the Selawik river, and since his time the only reliable information concerning this route rests upon the statements of a few intelligent half-breed traders.

The only rivers known to emerge from this inland waste are the Colville river, emptying its waters into the Arctic ocean about half-way between point Barrow and our eastern boundary; the Kok river, the mouth of which is located perhaps 50 miles to the eastward of Icy cape, near Wainwright inlet; the Inland river, or Noatak, falling into the northern part of Kotzebue sound, and the Kooak, the Selawik, and the Buckland rivers, debouching into the same estuary.

The natives on the coast and whalers report the existence of settlements farther up on all these rivers, with the exception of the Colville river, whose headwaters no white man has ever visited. The coast settlements between cape Prince of Wales and point Barrow are visited annually by many schooners and ships engaged in whaling, hunting, and trading, and the inhabitants are better accustomed to white men than the natives of any other regions in Alaska. Being possessed of great commercial genius and energy, they do not confine themselves to this intercourse with the Caucasian race, but carry on an extensive traffic with the natives of the Arctic coasts of Alaska and of Asia, meeting the latter on the common trading-grounds of Bering strait and the Diomede islands. In the intervals between this traffic the natives living in the villages of cape Prince of Wales and the Diomedes are active hunters and whalers, and when the icy barriers of winter close up their deep-sea hunting-grounds they confine themselves to the inlets and streams, hunting seal, reindeer, and polar bears, and trapping the Arctic fox, whose snowy coat is rising in value from year to year.

From point Hope to the eastward we find a series of villages, inhabited principally by reindeer hunters, who kill the seal during the summer season only for the sake of its luscious blubber and meat. The skins of the reindeer are made up into garments, and in that shape find ready sale among the whalers and the neighboring Eskimo tribes to the westward and southward. Along that dreary, low, ice-bound strip of coast between point Hope and point Barrow the scattered Inuit settlements also depend upon reindeer, seal, and walruses for their subsistence, each of these animals being hunted in its proper season.

From point Barrow eastward to the boundary the settlements are few and widely scattered, and the navigators who have made their way through the dangerous channel between the ice and the shore have found these people quite expert whalers, harpooning the huge cetaceans on their way to and from their breeding-ground at the mouth of the Mackenzie river.

The only mineral of any value known to exist on the coast of this immense Arctic division is coal, located in several easily-accessible veins in the vicinity of cape Lisburne, reported long ago by Kellett and other English explorers, but more definitely located and utilized by Captain Hooper, of the United States revenue marine, in July, 1880. This discovery is of importance to the cruisers of the revenue marine and to the steam whalers visiting the Arctic from San Francisco, but will not probably open up a field for private enterprise in that direction. The only attraction for the daring navigators who pay annual visits to this coast consists in the natural resources of furs, oil, and walrus-ivory; but under existing circumstances, and as long as our portion of the Arctic is comparatively unprotected against encroachments of unscrupulous contraband traders, there is danger of an utter exhaustion of furs and of walrus-ivory at no very distant period.

The whaling industry may be expected to decline gradually here, as it has done in other sections of the globe. The danger indicated lies in the fact that the trading-vessels coming to this region, chiefly from the Sandwich islands, have carried such quantities of alcoholic liquor that the natives have acquired a craving for the same that can no longer be subdued, and this causes them to look for no other equivalent for their furs, oil, and ivory than the means of intoxication. At the same time they have become utterly reckless in their pursuit of fur-bearing and other animals, thinking only of satisfying their desire for the present, without the slightest thought of the future; and if this state of affairs be continued, the extermination of the people, consequent upon the exhaustion of their means of subsistence, can only be a question of time. The immoderate consumption of alcohol brings with it disease and war. Against the former all remedies are out of reach, and, far from using his influence in suppressing strife arising through his fault alone, the freebooter supplies the unfortunate Eskimo liberally with breech-loading arms and ammunition, thus making their wars more bloody and destructive.

No trace or shadow of Christianity and its teachings has found its way to these desolate regions, the dark night of shamanism, or sorcery, still hanging over the human mind. These people share with their eastern kin a general belief in evil spirits and powers, against whom the shaman alone can afford protection by sacrifices and incantations. All sickness is ascribed to the direct action of evil spirits, and is treated accordingly. There can be no doubt of the sincere belief of many of these sorcerers in their own performances, but in every instance they make the exercise of their power, be it real or imaginary, a source of revenue and of influence among their people.

No philanthropic missionary has ever found his way to this icy coast, and unless some modern Hans Egede makes his appearance among them in the near future there will be no soil left in which to plant Christian seed.

It must be evident to any careful observer that there is no foundation in this division of Alaska upon which to build hopes for future development. As it is now it may remain for a few years at the most, but improvement seems now beyond the range of possibility.

As a foothold for Arctic explorers and for the scientific phalanx now steadily advancing toward the pole this region may yet be utilized, especially since a beginning has been made in this direction by the establishment of a meteorological station at point Barrow, under the auspices of the United States government.

A brief account of the animal life of this region, based upon our latest authority—a naturalist accompanying the steamer Thomas Corwin on her Arctic cruise—is partially embodied in the report of Captain C. L. Hooper.

Whales are found in all sections of the Arctic, and enter as soon as the ice breaks up and remain until compelled to leave by the closing up again of the sea. They are always found in the immediate vicinity of ice. The Eskimos assert that these marine mammals are most numerous after the departure of the whaling-fleet in the autumn. The variety called the "bow-head" by hunters is the most common; the "California gray" and the fin-back whale are much more rare; in fact, they are seen only occasionally here and there. The white whale, or grampus (beluga), although confined to no particular section of the Arctic, is more numerous in the vicinity of the rivers, and especially those emptying into Kotzebue sound, the female grampus with its young often ascending the rivers as far as tide-water reaches, feeding upon small fish, and they may be observed on almost any clear day or night, the mother coming first, puffing and snorting, with an occasional display of her milk-white back as she guides her calf to the feeding-ground.

The walrus, like the whale, is found all over these waters in the vicinity of ice. These animals enter the Arctic in the spring as soon as the ice disappears from Bering strait, and remain until driven away again by the ice, when they retire into Bering sea. They collect in large numbers on the ice in groups or herds, called "pods" by the hunters, and hundreds of them may be seen drifting through the strait on ice-floes during the month of June. The walrus seem to prefer detached bodies of ice to the main pack, because they can better watch thus for the approach of their natural enemy, the polar bear.

Seals in three or four varieties seem to be ubiquitous in these waters, the leopard seal being the rarest among them.

Polar bears are met with everywhere, and are generally found on the ice or in its immediate vicinity, but instances have been recorded of their being seen at sea, 50 or 60 miles away from any land or fixed ice. They grow to an enormous size, often weighing from 1,000 to 2,000 pounds. The skin of this animal is only valuable late in autumn and during the winter; but only a few are seen during that season of the year. They fight the walrus constantly, and generally successfully, and are ever ready to turn upon the man who happens to inflict a wound not immediately mortal.

Reindeer are said to be most numerous in that section of the coast lying between point Barrow and point Belcher, but they often change their habitation, at times migrating in immense numbers to regions hundreds of miles away, where their human pursuers do not dare to follow. This habit of migration alone has thus far preserved the reindeer from extirpation by the ardent hunter.

Moose do not appear anywhere on the Arctic shore, but natives report them as numerous in the far interior. Mountain sheep are also said to be plentiful on the lines of hills remote from the sea-shore, but only a few horns of the animal, shaped into spoons and other utensils, can be found on the sea-coast; and if these animals are killed in this region at all, it is done by natives located in the interior and not yet visited by white men.

Musk-rats and squirrels are numerous all over the coast. Their skins are offered for sale in large quantities, as the Eskimo does not make use of them for his wearing-apparel, but prefers the heavier coats of the reindeer and seal for that purpose.

Foxes are plentiful, especially the white or Arctic variety, and their skins are easily seen and meet with ready sale. In the depth of winter, when these foxes experience great difficulty in obtaining necessary food, they fearlessly approach the dwellings of men and help themselves to whatever comes within their reach, no matter what the material so long as it fills the stomach.

Aquatic birds are very numerous along the coasts and cliffs, and myriads of geese and ducks breed and rear their young on the vast swampy tundras as soon as the snow disappears and the plains are covered with the enlivening colors of an Arctic summer vegetation.

The only fish of any value found on the Arctic coast of Alaska are the salmon. They are quite plentiful and of fine flavor, though generally smaller than those caught farther south, and the Eskimo located in the vicinity of rivers cure large quantities of them by smoking and drying for winter use. The presence of vast numbers of seals living on fish alone indicates most certainly the presence of other smaller varieties of fish, but the natives appear to catch no other kind, and even the whalers can give us no information upon this point. In the chapter on fisheries further details will be found.

It is impossible to obtain statistics of the provisions, manufactured goods, arms, and ammunition shipped to the Arctic coast of Alaska and disposed of among the natives there, chiefly because the bulk of this trade has fallen into the hands of illegitimate traders, who clear from American ports for the coast of Siberia, then touch at the Sandwich islands to lay in a supply of spirituous liquors, and finally cruise along the Alaskan coast, purchasing

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all the furs, fossils, and walrus-ivory in the hands of the Arctic Innuits with rum, breech-loading arms, and ammunition. This traffic, though quite extensive in volume, lies at present altogether without the pale of official investigation, and only the continuous presence of one or two vessels of the revenue marine in these waters could reduce the trade of the Arctic division to a legitimate basis.

During the summer of 1880 an enumeration of the Eskimo inhabiting this division was made by Captain E. E. Smith, then ice-pilot of the revenue-enter Thomas Corwin. In nearly every instance this enumeration was made by actual count, and based upon this authority we present the following list of settlements and their population:

ARCTIC DIVISION.

Settlements.	Location.	Eskimo.
Total		3,094
Kingigamute	Cape Prince of Wales, Bering strait	400
Inalit.....	East Diomede island, Bering strait	40
Village opposite on mainland	Arctic ocean.....	18
Ta-apknk	Cape Espenbrng, Kotzebno sound	42
Kngalukmnte	Kotzebno sound	12
Kongigamute	Buckland river, Kotzebue sound	90
Selawigamnute	Selawik lake, Kotzebue sound.....	100
Kikltagamute	Kotzebue sound	200
Sheshagamute	Kotzebue sound	100
Tikizat	Arctic ocean	75
Ani-yakhi	Arctic ocean	25
Cape Sepping	Arctic ocean	50
Ip-Not	Arctic ocean	40
Tikirak	Arctic ocean	276
Cape Dyer	Arctic ocean	15
Cape Lisburne	Arctic ocean	13
Point Lay	Arctic ocean	30
Otok-kok	Icy cape, Arctic ocean	50
Kolumaturok	Arctic ocean	45
Neona-agpmute	Arctic ocean	74
Ootkalowik	Arctic ocean	55
Pluosburagin	Arctic ocean	29
Otiwakh	Arctic ocean	225
Refuge inlet	Arctic ocean	40
Kokmullit	Point Barrow, Arctic ocean	200
Colville river	Arctic ocean	50
<i>In the interior.</i>		
Koo-agamute villages	Koak river	250
Noatagamute village	Inland river	400
Killamnute villages	Kok river	150

The superficial area of the Arctic division of Alaska embraces 125,245 square miles, which, with a total population of 3,094, would give us the proportion of one native inhabitant to $40\frac{1}{2}$ square miles, without a single white man or woman. Fully nine-tenths of this vast area lies north of the Arctic circle.

THE YUKON DIVISION.

The second geographical division in the order of discussion is the largest in Alaska, comprising as it does the valley of the largest river on the North American continent, so far as this mighty stream flows within our boundaries. Along the eastern portion of this division its northern and southern boundaries are clearly defined by nearly parallel chains of mountains, the southernmost of which greatly exceeds in height the northern. Farther to the westward, where the Kuskokwim river takes its rise in the region unknown to white men, the branch of the main Alaskan chain of mountains, forming the water-shed between the latter river and the Yukon, gradually decreases in height, until nothing remains but isolated groups of hills only a few hundred feet above the level tundras, stretching away to the westward, until they finally merge with the shallow waters of Bering sea. In the vicinity of the portage route between these two large rivers, where they approach to within thirty or forty miles of each other, the country is so low that a canal of less than half a mile in length would allow the waters of two vast river systems to mingle with each other.

The life artery of all this vast division is, of course, the river from which it takes its name, which has served as the highway of nations and tribes for many centuries, long before the white man, with his improved means of transportation, accomplished thefeat, marvelous in their eyes, of traversing in one brief season the distance from its deltaic mouth to the Hudson Bay fort at the juncture of the Yukon and the Porcupine rivers.

The North American Indians of Athabaskan stock inhabiting the banks of the Yukon and its tributaries east of the Anvik and Chageluk rivers had but a faint conception of the sea to the westward, and perhaps a majority of the tribes were ignorant of its existence. On the other hand, the hardy Eskimo, living along the coast of Norton sound, the lower Yukon river, and the Kuskokwim delta, had advanced at an early day across the divide between the great river and the sea, following up the course of the Oonalakleet river, striking the Yukon forty or fifty miles south of Nulato. They settled the right bank of this river from there to its mouth and both banks west of the Chageluk, but were not allowed to hold peaceful possession, the Indians rallying from all directions and driving the intruders back far down the river, where the last traces of rolling hills are lost in the swampy tundras. From time to time the Eskimo advanced again, and traditional tales of bloody battles and years of war between the tribes have come down to us, but through all the varying fortunes of the contest the Eskimo succeeded in keeping the Indians from reaching the sea.

At the present time the Indian or "Ingalit" tribes hold full sway over the river down to Paimute village, situated below the junction of the Anvik river with the Yukon, and no Innuvit (or Eskimo) ascends the river beyond this point unaccompanied by white men, while no Ingalit descends without the same protection.

During the brief summer of this region the whole population flock to the river banks, attracted by myriads of salmon crowding the waters in their annual pilgrimage of reproduction up this mighty stream. At that time both banks are lined with summer villages and camps of fishermen, who build their basket traps far out into the eddies and bends of the stream and lay up their store of dried fish or "yukala" for the long Arctic winter. This annual congregation along the river banks completely drains of human life the valleys and plains stretching away to the northward and southward, and many of the lake regions in the western plains.

The traveler passing up or down the river during this busy season would form an entirely erroneous estimate of the density of the population if he should draw the conclusion that the vast forests covering the mountains and slopes on either side are inhabited by other tribes. Were he to make a brief excursion into the almost impenetrable forests and over the hills and mountains he would quickly perceive that along the river alone exist the conditions necessary to sustain life throughout the year. The small rivulets of the interior, and the vast swampy plains covered with snow for seven or eight months of the year, are only visited by the trapper and hunter when the skins of the marten, mink, and musk-rat are in their prime. Where the mountains are higher along the upper courses of the Yukon and the Tannaham game is more abundant and the inhabitants are less dependent upon the river and its fish.

In the past the staple food during the winter was the meat of the reindeer, which animal was then abundant throughout the whole Yukon section, but the first introduction of breech-loading arms among these native tribes caused an indiscriminate slaughter and the almost total disappearance of this animal from the immediate vicinity of the river. At that time the moose was found only high up the river, and the mountain sheep was rarely even heard of. At present the reindeer is again gradually making its appearance here and there, but the moose, though hunted constantly and energetically, seems to be increasing in numbers, and has advanced down the river and spread all over the delta between the Yukon and the Kuskokwim.

American enterprise has already taken hold of the fur-trade of this region to its full extent, and rival firms have lined the banks of the Yukon with trading-stores from Bering sea to the eastern boundary.

The shrill whistle of the steamboat is welcomed annually by thousands along the river banks at the breaking up of the ice, and it is echoed by the hills and mountains of the far interior, where the Hudson Bay Company once reigned supreme.

Foxes of all shades, from the highly-prized silver-gray and black to the fiery red and the snow-white fox of the Arctic, furnish the staple fur of the Yukon region. The martens and the land-otters come next in numbers, and the black and the brown bear constitute but an insignificant item of trade, while the mink of the tundras and the river delta, though exceedingly numerous, are next to valueless. The moose- and deer-skins are nearly all consumed by the natives themselves for clothing and bedding.

The total value of furs shipped from this vast region to the American and European markets does not probably exceed \$75,000 per annum, and the profits of this traffic are divided by two incorporated California companies, with fifteen or twenty trading-stations along the river. The fiercest competition has caused high prices of furs, and it frequently occurs that one or the other of the firms carries on its operations for a season at a loss.

No mineral deposits in paying quantities have yet been discovered as far as the Yukon flows within our boundaries. Prospectors have been at work for many years along its upper course, but only on the Tannaham have traces of gold been found in quantity sufficient to pay a laborer's wages during the brief summer season.

Rich as the river is in fish and the forest in game, the supply does not seem to be equal to the demands of the native population. There is an annually-recurring period of famine during the later months of winter and spring, and nearly all the money received from the traders is expended for flour, tea, and sugar, the shipment of these articles to the Yukon region increasing in quantity every year. Happily, nature affords better protection to fur-bearing animals than to game, and there does not appear to exist any danger of exterminating the former.

Much has been said and written by travelers who passed during a brief Arctic summer through the Yukon valley with its high temperature, rank vegetation, and brilliant flora (and by others who never saw the river) of

the great agricultural region here awaiting development in the near future. The real facts do not warrant any such expectation. The whole valley of the Yukon lies within a few degrees of the Arctic circle, the soil, where it is level, is always swampy, and even the slopes of hills and mountains are never drained of their superabundant moisture. The heat of summer has no effect beyond an astonishingly rapid growth of native grasses and weeds and the bringing into life of dense clouds of mosquitoes all over the country.

There is no doubt that a few vegetables will come to maturity here during the summer, and traders, tired of an uninterrupted diet of animal food, have made many experiments in this line. In no single instance has there been a continued success in these ventures, heavy frosts at the end of July having, as it were, frequently nipped in the bud the growing hopes of the traders of reaping a scanty harvest of potatoes, turnips, and radishes. Even if the interior valleys of the Yukon were as well adapted to the production of cereals as are the Saskatchewan and the Red River valleys, which they are not, there would still be the difficulty of finding a market for produce from such an inaccessible region. Their only artery of trade would be, of course, the Yukon, and that is not open to navigation until the month of July, closing again at the end of September. No sea-going craft can enter the river at all, and transshipments of cargoes would be necessitated at some point on the coast away from its mouth.

For hundreds of miles from the sea the Yukon river flows through low, level tundras, or mossy morasses, resting upon a foundation of clay. The shifting current of the river eats away the shores on either side with astonishing rapidity; the dull thud of caving banks is constantly heard by the traveler, and whole reaches change their aspect entirely within a single season. Stepping upon the shore, the explorer must jump from hummock to hummock or wade around from knee to waist deep. In many places the ice never disappears within a few inches of the surface, being protected from the rays of the sun by a non-conductive carpet of sphagnum. Wherever there is a slight elevation of ground in all this watery waste the wretched natives have located their villages, the dwellings consisting of excavations in the ground roofed over with mounds of sods. Here they fish during the summer and hunt the mink and the moose in the winter. Millions of geese and ducks visit this region in the breeding season, but comparatively few of them fall victims to the Inuit hunter, who is but an indifferent shot, and powder is dear. The capture of a large species of seal called "maklak" is considered a great windfall by the hunter, and if three or four of them succeed in slaying a snow-white beluga, or grampus, the village at once becomes the scene of festivity and rejoicing. Milk and honey cannot be said to flow at any time in this region, but oil does occasionally, lending a decided "luster" to the life of the Inuit and all his surroundings.

The observations of the temperature in the Yukon division have not been extensive, and of only two points in the interior have we a series of temperature readings. Nulato is a trading-station and Indian village, situated at about the central point of the Yukon River valley. Here the mean annual temperature, according to the observations of the Western Union Telegraph exploring parties, appears to be but $6^{\circ} 8'$ above zero. It must be remarked, however, that the warmest months of the year are not included in this series of thermometrical readings. From fort Yukon, at the junction of the Yukon and the Porcupine rivers, we have a complete set of readings for a whole year, from which we deduce an average for the summer temperature of 56° , and for the winter of -23° , with an annual mean of $+16^{\circ} 84'$.

We insert the following table, as published by the United States coast survey in the *Pacific Coast Pilot* of 1879:

TEMPERATURE OBSERVATIONS AT NULATO, ALASKA.

Months.	1866-1867.						
	9 a. m.	1 p. m.	8 p. m.	Mean.	Max.	Min.	Range.
January	Deg. -18.5	Deg. -16.3	Deg. -18.3	Deg. -17.7	Deg. +15	Deg. -49	Deg. 64
February	-15.5	-10.4	-12.9	-12.9	25	-51	76
March	+11.5	+19.6	+13.5	+14.9	38	-49	78
April	19.2	+34.4	25.9	26.5	49	.....	49
May	40.9	56.1	42.3	46.4	74	+22	52
Juno .....	.....	.....	.....	.....	.....	.....	.....
December	-11.2	-8.0	-10.2	-9.8	22	-56	78
Whole period	+3.4	+19.9	+5.8	+6.8	+74	-56	130

TEMPERATURE OBSERVATIONS AT FORT YUKON, YUKON RIVER, ALASKA.

Month.	Mean.	Max.	Min.	Range.
August	Deg. 66.3	Deg. 77	Deg. 58	Deg. 19

TEMPERATURE OBSERVATIONS AT FORT YUKON, YUKON RIVER, ALASKA—Continued.

Months.	Daily mean.	Mean at 1 p. m.	Monthly max.
1870.	<i>Deg.</i>	<i>Deg.</i>	<i>Deg.</i>
January	-26.85	27.58	17
February	-26.44	-23.55	16
March	-11.16	-0.94	28
April	12.66	19.43	52
May	41.24	48.81	70
June	53.49	62.00	.....
July	65.75	74.84	76
August	59.90	70.94	86
September	38.06	52.73	69
October	21.60	3.49	50
November	-8.28	-5.40	28
December	-18.43	-5.30	22
Spring	14.60	22.71	70
Summer	58.73	69.28	86
Autumn	17.37	26.03	69
Winter	-23.80	-22.70	22
Year	14.58	23.89	86

From Mr. E. W. Nelson's report to the Chief Signal Officer on the meteorology of Saint Michael and vicinity I extract the following:

During the past four years the first mush-ice has begun to form in the bays from the 15th to the 18th of October, and the bays have been frozen over so as to bear a man from the 25th to the 28th of October, with the exception of the year 1878, when a strong wind took the ice out, and it did not freeze again until the 10th of November. Up to the 15th of October vessels could enter here without danger of meeting ice. In the spring much more uncertainty exists, as to a great extent the date of open water depends upon what the prevailing winds may be. Long-continued north winds, following a severe winter, as in 1880, may keep the ice-barrier in until the 20th of June, and it has even remained until nearly the 1st of July; but these late dates are exceptional. As a rule, the ice will be thoroughly broken up and a strong vessel may enter Norton sound through the ice by the 10th of June (in 1875 a vessel reached this port May 25, but it was in the hands of an experienced ice-pilot). Vessels have reached here for the past four years between the 20th of June and the 1st of July; these may be called safe dates for any vessel except in an unusual season, as during a large part of June fine weather prevails. There is usually but little risk in entering the ice at that season.

TEMPERATURE.

The range of the thermometer during the past seven years has been from 76° to -55° or 131° ; though for the past four years the average yearly variation has been but 71.2° . The maximum variation of the past four years was in 1877 and 1878, when the highest extremes were respectively 75° and -50° , and 73° and -52° , amounting to a range of 125° . The smallest range in 1879 was 100° , from 65° to -32° ; the average of the mean monthly temperature, made up from the daily average of three observations for the years 1877, 1878, 1879, and 1880, is as follows:

	Degrees.
January	— 5.0
February	— 6.5
March	9.5
April	22.1
May	32.8
June	45.2
July	53.1
August	52.1
September	43.3
October	28.0
November	8.3
December	8.9

The minimum averages for any single month are -23.7° for February, 1877, and -19.8° for January, 1880. The highest monthly means are 54.5° and 53.4° in July and August, 1877, respectively. The mean annual temperature for the four years is 25.5° . The highest mean for one year is 26.8° , in 1879, and the lowest 23.9° , in 1880. January and February rank as the two coldest months, and July and August are the warmest.

TIDES.

The ordinary tides are small and give a rise and fall of only about 2 or 3 feet, but the winds from either north or south produce a striking variation. A long-continued and heavy gale from the south raises the water of Norton sound at least 10 feet above ordinary tide-mark and overflows large stretches of the low coast to the southward. Some of the heaviest of these gales occur during the winter, and frequently the sea, covered with heavy ice, sweeps over the low coast-lands between the Yukon and the Kuskokwim rivers for miles, and whole native villages have been thus destroyed with many of their inhabitants within the last few years. As the tide falls the ice, 3 or 4 feet thick, is left stranded on the low land. A light south wind is sufficient to raise the tide from a few inches to several feet above the ordinary extent. North winds affect the tides in proportion to their strength exactly in the inverse ratio of the south winds. When long-continued and strong gales from this direction occur (most frequently in autumn) the shallow bays are laid bare, long reefs are exposed, and a general fall of the water of about 8 feet occurs. It is to the high tides and south winds of spring or early summer that this region is indebted for the drift-wood which, emerging from the Yukon, is cast upon the beach, and furnishes the only fuel and building material here.

VEGETATION.

The whole coast in this part of the country is bare of any kind of timber, and a few patches of scraggy alder on sheltered southern hill-slopes, with the Arctic willows creeping over mossy ground, are almost the only bushes to be found. The ground is covered with a soft layer of decaying vegetable matter and mosses, which hold water like a sponge. In addition, a varied and hardy sub-Arctic flora manages to thrive everywhere except on the northern slopes of the hill-tops, where only lichens grow or total sterility prevails. As soon as the warm days begin the harder plants start up and by the first of June shade the country with green in sunny spots, making a pleasant contrast to the gray and russet elsewhere; a few days later, and the southern hill-slopes are thickly dotted with flowers.

GARDENING.

Repeated attempts to raise garden vegetables have been made, but with poor success, as turnips, radishes, and lettuce appear to be the only vegetables from which any adequate return may be expected, and even in these cases the trouble far exceeds the reward.

ATMOSPHERIC PHENOMENA.

For the four years preceding April 30, 1880, the average proportion of cloudiness during the year has been as follows:

The average number of totally cloudy days.....	182.2
The average number of partially cloudy and fair days.....	131.5
The average number of clear days.....	50.5

The average number of days during which rain or snow fell at Saint Michael during the last four years was:

January.....	9.0
February.....	5.7
March.....	8.2
April.....	16.2
May.....	11.2
June.....	9.8
July.....	14.2
August.....	19.5
September.....	17.7
October.....	16.0
November.....	10.0
December.....	9.7

Or an annual average of 147.5 days on which rain or snow fell. The average annual precipitation equals 18.36 inches.

The number of days on which rain or snow fell appears very disproportionate, but this is readily explained by the character of the precipitation. In but a single instance during four years have I seen a hard down-pour of rain, such as is common in lower latitudes, but either fine showers of short duration or long misty rains, which at times fall for a day or two, leaving scarcely a measurable quantity of moisture in the rain-gauge, though every exposed object becomes saturated like a water-soaked sponge. The snow usually bears the same character and falls in fine amorphous flakes, rarely showing perfect crystalline forms and as rarely falling in large flakes.

ELECTRICAL PHENOMENA.

Thunder showers are said to be quite common in some parts of the Yukon River valley during the summer, but in the vicinity of Saint Michael flashes of lightning, accompanied by thunder, have been observed on two occasions during the four years. Probably the low temperature and the high relative humidity combine to lessen such displays here. During the coldest weather in winter, nearly always after a snow-fall, the air is in a highly-charged condition, and at such times a passing stroke upon any loose fur causes the hairs to stand up, so fully charged that by presenting the finger to a single hair-tip the snap of a spark may be heard 3 feet away; and in the dark a train of sparks follows the hand in stroking any fur.

MIRAGES.

During the fine weather, from the last of February until the latter part of July, most of the clear days are accompanied by more or less mirage, which is generally strongest on cold, clear days in March and in fine, warm days in May and June. The coast hills and capes, 30 to 75 miles away, are lifted up and contorted into the most fantastic shapes, which constantly assume new forms with protean rapidity, until the whole landscape appears but a form of air, the least change in one's altitude producing a disproportionate change in the scene. I have seen a tall, pinnacled hill, apparently hundreds of feet high, melt away and totally disappear under the horizon by descending about 15 feet from my first point of view, and the changes in outline are equally abrupt and surprising. During the entire year upon pleasant days the air is constantly vibrating more or less appreciably to the eye, but during the clear, intensely cold days in the latter part of winter these vibrations are so energetic that everything on or near the surface of the ground becomes at a distance of about two miles blended into an indistinct, tremulous blur.

CHANGE OF SEASON.

As in most other places under high latitudes, there is no long gradation from season to season, but instead we have two well-marked periods—a long winter of about seven months, extending from October until well into May, and five months of summer. The winter is by far the best, as there are long periods of beautifully clear days, which are welcomed in spite of the usually accompanying intense cold. The summer is rendered very disagreeable by a large number of cold, misty rains, and the low overhanging stratum, which appears to shut down all about like a leaden covering. As noted in the first part, no slush-ice forms in the bays with the water at a temperature of 30.5° ; and, in addition, the whole surface of the sea, if calm, appears covered with large oily-looking patches, which slowly increase in size, and as the temperature reaches 30° the slush begins to unite. In the oily-appearing spots the water, on close examination, has a milky shade, and is seen to be full of extremely fragile laminae of ice floating with their edges vertical. These plates, when ground and broken, form the slush-ice along the shore. Many of these plates are an inch or more in diameter, but are so fragile that a breath dissolves them. Ice forming in this way is always rough, but a rapid and extended fall of temperature directly after the oily spots appear sometimes throws a thin sheet of glassy ice over the sea for many miles in a single day.

MIGRATION OF BIRDS.

The earliest arrival in spring is generally a solitary goose or two. In the last days of April, and from then on until the first of June, birds continue to arrive, the main migration falling between the 15th and the 25th of May. The common barn-swallow comes May 20; the water-fowl, geese, and ducks begin nesting on the last of May. The autumn migration of birds passing southward begins on the last of July, and only a few of the hardier water-fowl remain at the end of September.

FISH

The arrival of fish depends largely upon the date of open water along the shore. Herring generally arrive from the 5th to the 20th of June. The delicious king-salmon come from the 15th to the 25th of the month, and the inferior species of salmon in July and the month of August.

In 1868 Mr. William H. Dall made a report upon the agricultural resources of Alaska, which was published by the Commissioner of Agriculture. From this official document I make the following extract:

The character of the country in the vicinity of the Yukon river varies from rolling and somewhat rocky hills to broad and marshy plains, extending for miles on either side of the river. The underlying rocks in great part are Azoic, being conglomerate, syenite, and quartzite. The south shore of Norton sound and portions of the Kadiak peninsula are basalt and lava. There is on the northeast shore of Norton sound an abundance of sandstones and clay-beds containing lignite. Sandstone is also abundant on the Yukon, alternating with the azoic rocks. The superincumbent soil differs in different places. In some localities it is clayey, and in such situations is quite frequently covered with sphagnum, which always impoverishes the soil immediately beneath it. In others it is light and sandy, and over a large extent of country it is the richest alluvial, composed of very fine sand, mud, and vegetable matter, brought down by the river and forming deposits of indefinite depth. * * * The soil is usually frozen at a depth of three or four feet in ordinary situations. In colder ones it remains icy to within eighteen inches of the surface. This layer of frozen soil is six or eight feet thick; below that depth the soil is destitute of ice, except in very unusual situations.

The mean temperature of the Yukon region, as given by Mr. Dall with reference to the point of Saint Michael, in latitude $63^{\circ} 28'$; the mission of the Greek church on the Yukon river, in latitude $61^{\circ} 47'$; Nulato, on the Yukon river, in latitude $64^{\circ} 40'$, and fort Yukon, on the same river, in latitude $67^{\circ} 10'$, is exhibited in the following table:

	Saint Michael.	Greek church mission.	Nulato.	Fort Yukon.
	Deg.	Deg.	Deg.	Deg.
Mean for spring.....	+20.3	+19.62	+29.3	+14.22
Mean for summer.....	+53.0	+59.32	+60.0	+59.67
Mean for autumn.....	+20.3	+36.05	+36.0	+17.37
Mean for winter.....	+ 8.6	+ 0.95	-14.0	-23.80
Mean for year	+20.3	+26.48	+27.8	+16.92

The temperature as exhibited in the above table would not seem to afford much encouragement to the agricultural immigrant, even without reference to the existence of frozen soil throughout the year within a short distance of the surface as mentioned above.

Incomplete and unsatisfactory as our information is on this subject, the data given would appear to be conclusive as to the adaptability of the Yukon River valley for agricultural pursuits. From various points on the river traders report a temperature of from 50° to 67° below zero, a common occurrence during the winter; and, though travelers in and residents of this region complain of oppressive heat during the summer, severe frosts frequently occur in the months of June and August, and one instance is recorded of a heavy frost at Nuklukait on the 27th of July, which destroyed a promising vegetable garden planted there in the summer of 1879.

Two Roman Catholic missionaries, Bishop Charles Seghers, S. J., and Father Mondard, his assistant, passed the winter of 1877-'78 in the central Yukon region. They suffered much from severe cold during the winter, and when at last the ice disappeared, and the snow melted away from forest and from tundra, the contrast between winter and summer was so great that the pious missionaries were filled with delight, and warming their bodies, chilled through the eight months of constant cold, in the genial rays of the sun of July, they grew enthusiastic over the warm climate of the Yukon and its "fertile valley" that might support millions of agriculturists. These good missionaries evidently had no experience in farming or husbandry, and had never attempted to sink a spade into the matted, elastic covering of the Yukon tundra. The plague of the Arctic, the mosquito, alone would drive any but the most energetic and desperate settlers from the country.

In the apparent absence of precious minerals in paying quantities we must base our hopes for the future of the Yukon region upon its furs and fish alone.

The dreary coast-line of this division, washed by the shallow waters of Bering sea, is inhabited by a hardy race of seal and walrus hunters, who have planted their villages at every point where it is possible for a few families to eke out a living. A few points on this coast-line from cape Prince of Wales to cape Rennmantzof require special mention. Port Clarence, just south of cape Prince of Wales, offers fine harbor accommodations, and three or four Inuit villages are located here. King's island, called "Oukivok" by the natives, is a small, high island about 30 miles southeast from the Diomede islands. This island is about 700 feet in height, with almost perpendicular cliffs and deep water on all sides, is composed of basalt, is exceedingly rugged in outline, and is barren of tree

or shrub. The most remarkable feature of the island is the village, composed of winter houses, about forty in number, excavated into the side of the cliffs, and built on a steep declivity, which rises from the sea at an angle of about 45°. On small projections from the face of the cliff the inhabitants erect their summer houses, consisting of rude tents of walrus and seal hide. The natives of this Arctic Gibraltar live almost entirely by walrus and seal hunting, the skins of these animals being manufactured into roofs of houses, coverings for their kaiaks, clothing, straps, lines, and other articles. The flesh of both the walrus and the seal is their chief article of food, and the ivory of the former is sold to passing traders for rum, breech-loading arms, ammunition, tobacco, and a few trifles. The skins of the seal ("lavtak") form an article of trade with the natives of the mainland, America, and Asia. This isolated community seems to be very prosperous.

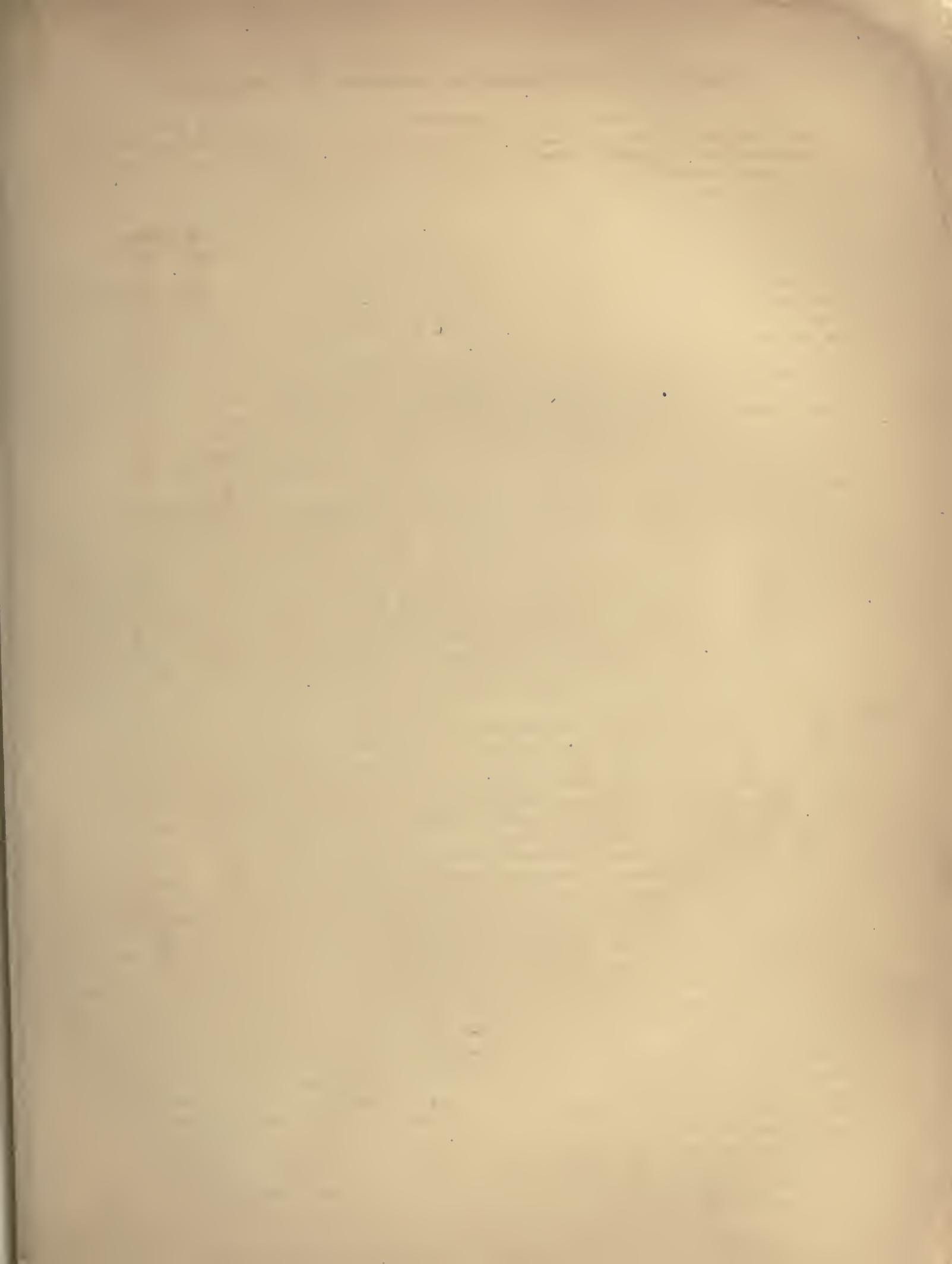
Proceeding down the coast, and entering the vast estuary of Norton sound, we find on its northern coast a deep indentation, Golovin sound. Here indications of lead and silver have been found, and the ubiquitous prospector has already visited the spot with his pick and shovel. The results of the enterprise, however, have not thus far been made definitely known.

The most important locality, however, on this coast is the trading-post of Saint Michael, where rival firms have established their depots for the Yukon River and Arctic trade. At this place each firm has its managing agent for the district, who is supplied once a year with a cargo of goods from San Francisco. The station-keepers from the interior come down to the coast at the end of June or the 1st of July, and each receives his allotment of goods to take back with him in sail-boats and bidars during the few months when navigation on the river is not impeded by ice. The vessels supplying this depot can seldom approach the anchorage of Saint Michael before the end of June on account of large bodies of drifting ice that beset the waters of Norton sound and the straits between Saint Lawrence island and the Yukon delta.

In the description of this division we must include the island of Saint Lawrence. This island originally had a population of about 1,000, but during the winter of 1878, on account of the failure to lay in supplies during the hunting season, a period of general starvation occurred, which caused the death of at least 400 men, women, and children, principally the latter two classes. There are several villages on the island inhabited by a tribe of Asiatic or western Eskimo. They are tall, straight, and muscular, are generally good looking, and subsist principally upon the walruses and the seal, generally taking only as much as is actually needed for their immediate wants, without providing for the future. They make houses, boats, clothing, etc., of the skins of the walrus, and sell whalebone and ivory to traders for rum and breech-loading arms. Living directly in the track of vessels bound to the Arctic for the purpose of whaling and trading, this situation has been a curse to them; for as long as the rum lasts they do nothing but drink and fight among themselves, and whenever they collect a few furs, instead of exchanging them for provisions or clothing, they refuse to sell them for anything but whisky, breech-loading arms, and ammunition.

There is a chapel at Saint Michael, but the headquarters of the Greek Catholic church, which has the only established mission in this division, is at Ikognite, on the Yukon river, just opposite the point where the Kuskokwim portage comes over. Here there is a church with several church buildings under control of an ordained priest, whose influence over these people is very small. On paper he lays claim to having 3,000 parishioners, but I was unable at any settlement to recognize his title, even approximately. The worthy priest abounds in faith, however, and, in addition to his first-cited claim, also reports that he holds 600 more "nearly persuaded", as if it were a mere question of time to gather them in finally.

The people of the United States will not be quick to take to the idea that the volume of water in an Alaskan river is greater than that discharged by the mighty Mississippi; but it is entirely within the bounds of honest statement to say that the Yukon river, the vast deltaic mouth of which opens into Norton sound of Bering sea, discharges every hour one-third more water than the "Father of Waters". There is room for some very important measurements to be made in this connection, which I hope will soon be made. We know the number of cubic feet of water which the Mississippi rolls by New Orleans every day, but we do not possess authority concerning the volumes of the flood discharged by the Yukon. Entering the mouth, or rather any one of the mouths, of this large river, we are impressed first by the exceeding shallowness of the sea 50 miles out from it, varying in depth from 2 to 3 fathoms; and, second, by the mournful, desolate appearance of the country itself, which is scarcely above the level of the tide, and which is covered with a monotonous cloak of scrubby willows and rank grasses. The banks, wherever they are lifted above the reddish current, are continually undermined and washed away by the flood, and so sudden and precipitate are these land-slides at times that traders and natives have barely escaped with their lives. For 100 miles up through an intricate labyrinth of tides, blind and misleading channels, sloughs, and swamps we pass through the same dreary, desolate region, until the higher ground is first reached at Kusilvak, and until the bluffs at Andreievsky and at Chatinakhi give evidence of the fact that all the land in Alaska is not under water. It is wintered, however, here, there, and everywhere, and impresses one with the idea of a vast inland sea; which impression holds good even as far up the river as 700 or 800 miles, where there are many points, even far in the interior, at which this river spans a breadth of 20 miles from shore to shore. As we advance toward its source we are not surprised, when we view the character of the country through which it rolls, at the vast quantity of water in its channel. It would seem as though the land itself drained by the river on either side within Alaska were a sponge, into which





ALASKA: ITS PEOPLE AND PLACES

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thousands of cubic miles of water,
leaving evidence of the peculiar non-co-
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dred-foot and overhanging ledges of rock growth at
that ice failed to melt, and the renewed
border, will again prevent the hawking, and
will be hidden from view.

The borders of the ~~bottom~~ of this river
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A list of *ttl*'s follows:

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all rain and moisture from the heavens and melting snow are absorbed, never finding their release by evaporation, but conserved to drain, by myriads and myriads of rivulets, the great watery highway of the Yukon. I noticed a striking evidence of the peculiar non-conductive properties of the tundra mosses, or swale, last summer in passing through many of the thousand-and-one lakes and lakelets peculiar to that region, where the ice had bound up the moss and overhanging water-growth at the edges of the lakes. In the breaking up and thawing out of summer that ice failed to melt, and the renewed growth of the season of vegetation, reaching out in turn from this icy border, will again prevent thawing, and so on until shallow pools and flats are changed into fixed masses of ice hidden from view.

The borders of the bed of this river alternate from side to side, with flats here and low hills there, the river shifting from one to the other. The hills above the mission as well as the rolling uplands are all timbered, while the flats are covered with rank grasses and willow thickets. This river is bound by ice in October and is not released until the sun of June exerts its power. A very remarkable occurrence in connection with this annual event took place in the summer of 1880, by which a famine ensued at the mouth of the Yukon, and the people thereof were obliged to repair for food to neighboring settlements far to the northward or on the Kuskokwim. The ice came down the Yukon in such masses and in such profusion that it grounded in the deltaic mouth in the month of July, so as to form a barrier against the running of the salmon.

A list of settlements and stations in the Yukon division with their respective population is here appended, as follows:

YUKON DIVISION.

Settlements.	Location.	Total.	White.	Creole.	Athabas-	Eskimo.
					kan.	
Total.....		6,870	18	19	2,557	4,276
Cape York.....	Bering sea.....	24				24
Sinlogamute.....	Port Clarence.....	36				36
Kaviazagamute.....	Lake Imorook.....	200				200
Nook.....	Cape Douglas, Bering sea.....	36				36
Ookivagamute.....	King's Island, Bering sea.....	100				100
Azlak.....	Sledge island, Bering sea.....	50				50
Small village opposite on mainland.....	Bering sea.....	10				10
Co-lunakhtagowik.....	North coast of Norton sound.....	10				10
Ayacheruk.....	North coast of Norton sound.....	60				60
Chitunashnak.....	North coast of Norton sound.....	20				20
Imokhtagokshuk.....	North coast of Norton sound.....	30				30
Okpiktolik.....	North coast of Norton sound.....	12				12
Tnp-ka-ak.....	North coast of Norton sound.....	15				15
Chiookak.....	North coast of Norton sound.....	15				15
Ignituk.....	North coast of Norton sound.....	100				100
Atnuk.....	North coast of Norton sound.....	20				20
Nubviakchugalik.....	North coast of Norton sound.....	30				30
Kvikh.....	North coast of Norton sound.....	30				30
Ogowingak.....	North coast of Norton sound.....	20				20
Scattered villages.....	Head of Norton bay.....	20				20
Oonakhtolik.....	East coast of Norton sound.....	15				15
Shaktolik.....	East coast of Norton sound.....	60				60
Tnp-hemikva.....	East coast of Norton sound.....	10				10
Onnahakleet.....	East coast of Norton sound.....	100				100
Igawik.....	East coast of Norton sound.....	8				8
Kegokhtowik.....	East coast of Norton sound.....	20				20
Ketchumville.....	East coast of Norton sound.....	5	3	2		
Saint Michael and Tachik village.....	East coast of Norton sound.....	109	4	5		100
Pikmiktalik.....	East coast of Norton sound.....	10				10
Pastollakh.....	East coast of Norton sound.....	80				80
Kotlik.....	Yukon delta.....	8				8
Fetkina.....	Yukon delta.....	30				30
Village (name unknown).....	Yukon delta.....	6				6
Ingechuk.....	Yukon delta.....	8				8
Kashutuk.....	Yukon delta.....	18				18
Chefokhlagamute, 1st.....	Yukon delta.....	15				15
Chefokhlagamute, 2d.....	Yukon delta.....	5				5
Chefokhlagamute, 3d.....	Yukon delta.....	6				6
Iglagagamute.....	Yukon delta.....	10				10
Askinuk.....	Yukon delta.....	175				175
Kashunok.....	Yukon delta.....	125				125
Kaiallgamute.....	Yukon delta.....	100				100
Ookagamute.....	Yukon delta.....	25				25
Onnakagamute.....	Yukon delta.....	20				20
Village (name unknown).....	Yukon delta.....	15				15
Kwigathlogamute.....	Yukon delta.....	30				30
Nunochogamute.....	Yukon delta.....	40				40

YUKON DIVISION—Continued.

Settlements.	Location.	Total.	White.	Creole.	Athabas-kan.	Eskimo.
Nauvoglokhlagamto.	Yukon delta.	100				100
Villages on Big Lake region.	Yukon delta.	166				166
Coast between Pastolikah and cape Rnmiantzof.	Yukon delta.	300				300
Komarov's Odliotchka.	Yukon river.	13		1		12
Alexeief's Odinotechka.	Yukon river.	16		1		15
Eliseief's Barabara.	Yukon river.	20				20
Chatinakh.	Yukon river.	40				40
Andreievsky Redoute.	Ynkou river.	14	1	1		12
Starikvikhpak.	Yukon river.	90				90
Rasboinik.	Yukon river.	151				151
Ooglovia.	Yukon river.	102				102
Ingahamé.	Yukon river.	63				63
Siugle house.	Yukon river.	10				10
Starale Selenie.	Yukon river.	55				55
Ikogmuto, mission.	Ynkon river.	148		5		143
John's station.	Ynkon river.	37	1	1		35
Ryhua.	Yukon river.	40				40
Pogoreshspka.	Yukon river.	121				121
Single house.	Yukon river.	9				9
Palmuto.	Ynkon river.	80				80
Askhemuto.	Yukon river.	30				30
Ignokhatakamute.	Yukon river.	175				175
Makcymuto.	Yukon river.	121				121
Auvik station and village.	Yukon river.	95	1			94
Single house.	Yukon river.	20				20
Single house.	Yukon river.	12				12
Single house.	Yukon river.	15				15
Tanakbotkhaiak.	Yukon river.	52				52
Siugle house.	Yukon river.	15				15
Chageluk settlements.	Chageluk slough and Innok river.	150				150
Khatuotoutze.	Ynkon river.	115				115
Kaiakak.	Yukon river.	124				124
Kaltag.	Yukon river.	45				45
Nulato, station and village.	Yukon river.	168	2	3	163	
Kuyukuk settlements.	Koyuknk river.	150				150
Terentieff's station.	Yukon river.	15				15
Big Mountain.	Ynkou river.	100				100
Single house.	Yukon river.	10				10
Sakatalan.	Yukon river.	25				25
Ynkokakat.	Yukon river.	6				6
Melozikakat.	Ynkon river.	30				30
Mentokakat.	Yukon river.	20				20
Soonakakat.	Yukon river.	12				12
Medvednaia.	Ynkon river.	15				15
Noyokakat.	Yukon river.	107	1			106
Kozma's.	Yukon river.	11				11
Nukinkalet.	Yukon river.	29	2			27
Rampart village.	Yukon river.	110				110
Fort Yukon.	Yukon river.	109	2			107
Fort Reliance.	Yukon river.	83	1			82
Gens de Large.	Yukon river.	120				120
Fetoutliu (David's people).	Yukon river.	106				106
Tennanah villages.	Tennanah river.	700				700
Salut Lawrence island.	Bering sea.	500				500

The Russian mission on the Yukon river claimed in the year 1880 that 2,252 of the natives were professors of Christianity, but personal observations lead me to believe that this estimate is exaggerated, comprising as it does quite a number of individuals in distant settlements to which this zealous missionary can show no title beyond a wholesale sprinkling of the village during a hurried visit. In 1880 there was no school in existence within the jurisdiction of this mission, but steps were being taken by the bishop for the location of an educational establishment at Ikogmuto.

The trade of the Ynkou division has been thus far confined altogether to the barter with the natives for furs, seal-oil, and some walrus-ivory along the coast. The importations of goods and provisions in payment of these native productions are quite large, amounting in the year 1880 to 150,000 pounds of flour, 100 chests of tea of 52 pounds each, 150 half-barrels of brown sugar, and 50 half-barrels of white sugar. The consumption of flour alone foots up 25 pounds for each man, woman, and child in the district, and the demand for this article is increasing annually. The dry goods, hardware, etc., imported, together with this large quantity of provisions, represented in 1880 a value of nearly \$20,000.

The furs obtained in exchange for these provisions numbered 27,356, of all kinds, divided as follows:

Wolf	32
Lynx.....	310
Beaver	3,781
Silver fox	206
Cross fox	800
Red fox	5,000
White fox	1,791
Beaver	3,200
Marten.....	2,000
Mink.....	7,774
Bear	152
Musk-rat.....	2,000
Land otter	310
 Total.....	 <u>27,356</u>

The market value of these skins was between \$75,000 and \$80,000.

The superficial area of the Yukon division is 176,715 square miles, which, with a total population of 6,870, would indicate a density of population at the rate of 1 inhabitant to 25 $\frac{2}{3}$ square miles, the number of whites and creoles (19 and 18 respectively) being too small to be taken into consideration in this connection.

THE KUSKOKVIM DIVISION.

The third geographical division is named after the river next in size to the Yukon among Alaskan streams, and comprises the whole of the Kuskokvime valley, with all its tributaries, and two other rivers, the Togiak and the Nusbegak, also emptying into Bering sea.

The length of the main artery of this division is not known, the headwaters of the Kuskokvime having thus far been untouched by the explorer or trader. We have the statements of natives to the effect that the upper Kuskokvime river flows sluggishly through a vast plateau or valley, the current acquiring its impetus only a short distance above the village of Napaimute. From this point down to the trading-station of Kalmakovsky and to the southern end of the portage route between this river and the Yukon the banks are high and gravelly, and chains of mountains seem to run parallel with its course on either side. This section of the Kuskokvime valley is but thinly populated, though apparently the natural advantages are far greater than on the corresponding section of the Yukon. The soil is of better quality, and is sufficiently drained to permit of a more luxuriant growth of forest trees, shrubs, and herbs.

Such indications of minerals as have been found here are the most promising of those in any portion of western Alaska, consisting of well-defined veins of cinnabar, antimony, and silver-bearing quartz.

Game and fur-bearing animals do not abound in this section of the river valley, as it is an old hunting-ground, and has been drained by constant traffic for more than half a century. The principal business of the traders at Kalmakovsky is derived from the almost unknown headwaters of the river, where the beaver, marten, and fox are still plentiful.

From the headwaters down to Kalmakovsky the people belong to the interior Indians, or Athabaskans, and for some distance below this point there seems to be a mixed race of Innuits and Indians; but from the village of Okhogamme down to the coast of Bering sea the Eskimo alone appear on both banks of the Kuskokvime, peopling also the section of the delta between cape Vancouver (Nelson island) and the mouth of the river and the island of Unnivak, lying off the coast. This triangular section, having for its apex the above-mentioned village, teems with population. Villages dot the banks of the river at intervals, the distance between them gradually decreasing toward the sea-coast, while on the delta the lakes and sluggish streams are lined with numerous settlements.

According to our standard the people of the lower Kuskokvime river and of the tundras are very poor indeed, their country offering nothing but seals in the sea and the river, myriads of minks, some foxes, the brown bear, and a few moose. Among these animals the hair-seal is of the greatest importance, furnishing oil and lavtaks (dried seal hides), the chief articles of trade with the white and native traders on the upper river. The skin of the mink is of so little value that traders often refuse to buy unless in very large quantities. Altogether these people would be in a sorry plight indeed were it not for the abundant supply of salmon during the summer. They all flock together on the banks of the Kuskokvime, and fairly line the river with fish-traps and drying frames, or poles, and from the beginning of June to the month of August the traps are constantly emptied and filled again. The quantity of fish secured during the season is very great, even in proportion to the number of inhabitants; but when we consider the wasteful practice of drying the fish until only a small fraction of the original substance remains, it cannot astonish us to hear the natives complain of an insufficient supply. Over 4,000 people lay in the winter supply for themselves and for their dogs during a few months of summer, but it is safe to state that with a more economical mode of preserving the fish four times the number could live in comfort within the same space.

A glance at the map will show a very conspicuous broad opening through which the strong current and turbid waters of the Kuskokvime are discharged into Bering sea. The tides in this spacious estuary run with a surprising velocity and an enormous vertical rise and fall.

At the village of Agaligamute I saw a mound, the apex of which was over 50 feet above the level of the sea at low water, totally submerged by the flood-tide, assisted by a southwesterly gale. This extraordinary change in tide-level extends up into the mouth of the river beyond the point where the trading-schooners discharge their cargoes at Shineyagamute.

At each succeeding flood-tide a traveler in his bidarka can pass over willow thickets of large size and groves of poplar, while at low water he finds himself sunk between high banks of bottomless mud, shutting him out from all view of the interior. The aspect of the country here, as far as it lies under the direct influence of the changing tide, is strikingly desolate and forlorn. The settlements along the banks and the tributary swamps of this river are located on little patches or narrow dikes only just above high water, and from here across to the hills to the eastward extends a great swale or watery moor of from 40 to 60 miles in width. Hummocks and ridges afford a path to the hinter here and there, and when the river is at its ebb the great flats of mud and slimy ooze are bare. A rank and luxuriant growth of coarse water-grass, reeds, and rushes covers the whole expanse, with little clumps of dwarf-willows and poplar along the elevated tide-rib.

The native villages are ranged close together, each occupying all the dry land in its immediate vicinity. It is difficult even to find sufficient dry ground outside of the houses upon which to pitch a tent, and at low tide it is almost impossible to pass between the village and the water's edge, a mile or more away, separated as they are by an almost impassable mud.

On the western bank of the lower Kuskokwim the land is also low and swampy, and the settlements are more widely separated from each other. In the lower part of this stream, in the vicinity of Good News bay, where one bank can no longer be sighted from the other, there exists a group of low bars or islets, upon which both the common seal and the maklak are said to "haul up" to breed. This statement has not, however, been definitely established, and it is probable that here, as elsewhere, these marine mammals bring forth their young on the ice; certain it is that large numbers of seals are killed on and in the immediate vicinity of these banks. The whole-domestic economy of the natives here seems to be founded upon the maklak and the beluga, and the oil procured from them is the currency with which they purchase some necessaries and a few luxuries of life. Their clothing, manufactured of the skin of the ground-squirrel, or yeveashka, is purchased with oil, and the few garments of cotton-drill and gandy prints to be found among them have been obtained in the same manner.

The density of population, as portrayed in the list of settlements on the river mouth and the country immediately adjoining, is such that in their active and energetic fishing for their own consumption they seem to absorb the greater part of the salmon run—at least the natives on the upper river complain quite frequently of the scarcity of this fish. This state of affairs may, however, be ascribed partly to the fact that not only do the Kuskokwim people proper fish here, but large numbers come annually from the lower delta of the great Yukon, where the run of salmon occasionally proves a total failure on account of ice grounding in the shallow channels and keeping the fish from ascending.

For many years one trading-station belonging to one of the wealthy San Francisco companies seemed to absorb the whole trade of the Kuskokwim river. Two years ago, however, a rival agency was established, and at present there seems to be traffic enough to afford to each firm a moderate profit. The most valuable skins shipped from this region are those of martens and of foxes, procured from the roving tribe of Koltehanes inhabiting the *terra incognita* about the headwaters of the Kuskokwim.

There is another feature in this country which, though insignificant on paper, is to the traveler the most terrible and poignant infliction he can be called upon to bear in a new land. I refer to the clouds of bloodthirsty mosquitoes, accompanied by a vindictive ally in the shape of a small poisonously black fly, under the stress of whose persecution the strongest man with the firmest will must either feel depressed or succumb to low fever. They hold their carnival of human torment from the first growing of spring vegetation in May until it is withered by frosts late in September. Breeding here as they do, in the vast network of slough and swamp, they are able to rally around and to infest the wake and the progress of the explorer beyond all adequate description, and language is simply unable to portray the misery and annoyance accompanying their presence. It will naturally be asked how do the natives bear this? They, too, are annoyed and suffer, but it should be borne in mind that their bodies are anointed with rancid oil; and certain ammoniacal vapors, peculiar to their garments from constant wear, have a repellent power which even the mosquitoes, bloodthirsty and cruel as they are, are hardly equal to meet. When traveling, the natives are, however, glad enough to seize upon any piece of mosquito-net, no matter how small, and usually they have to wrap cloths or skins about their heads and wear mittens in midsummer. The traveler who exposes his bare eyes or face here loses his natural appearance; his eyelids swell up and close, and his face becomes one mass of lumps and fiery pimples. Mosquitoes torture the Indian dogs to death, especially if one of these animals, by mange or otherwise, loses an inconsiderable portion of its thick hairy covering, and even drive the bear and the deer into the water.

The second river system belonging to this division is that of the Togiak, a stream emptying into the western portion of the coast indentation between capes Newenham and Constantine. The course of this river is brief, the distance between the high plateau from which it springs and the sea-coast being not much over 100 miles, but it is broad and has many lake-fed tributaries, and its banks are lined with populous villages.

This whole region is poor in such natural products as white men desire, and one of the results of this poverty is that no white trader has ever thought it worth his while to visit these people. The Togiak Eskimo seem to live by hundreds and even thousands in an almost primitive state, without caring for any of the white man's possessions, with the sole exception of tobacco, an article they have received from surrounding tribes, and which they have learned to appreciate. They seem to live without any tribal authority or organization, and have no chiefs, each family managing its own affairs, coming and going with perfect freedom, without any regard for the wishes of other members of the community. Whole families and communities leave their winter houses or subterranean dwellings as fancy takes them, select some point on the tundra or on the river bank, and pass two or three months with no other shelter than that afforded by their upturned kaiaks and a water-proof shirt made of deer-trails and bladders stretched over paddles and spears. As the wind changes they shift this unsatisfactory shelter about, seemingly caring for nothing beyond a small space to lay their heads where they are not exposed to the pelting rain or snow.

Brown bears (*Ursus Richardsonii*) are plenty in the swampy river bottom during the fishing season, and are boldly attacked by the men with spears and lances; but when the salmon disappears the people migrate inland to the hills and devote a month or two to the ardent pursuit of the ground-squirrel to replenish their stock of clothing. The skins of minks and foxes alone are from time to time taken down to a small trading-post on the sea-coast and exchanged for tobacco by one or two courageous individuals who act as middlemen.

In the winter herds of moose are said to visit the Togiak River valley, and, being easily hunted and overtaken in the deep snow, afford a welcome change of diet to the natives. Along the mountain range extending between the Kuskokwim and the Togiak rivers, and impinging upon the sea at Cape Newenham, reindeer are plenty, and are hunted constantly by the natives on both sides of the divide. Of the country between the headwaters of the Togiak and the Kuskokwim nothing is known, but it is safe to conclude that it is not permanently inhabited.

Turning away from these populous villages with their mound-like, grass-grown dwellings, upon the apex of which the natives are wont to perch, gazing out to sea or into vacuity, recalling the aspect of a village of prairie-dogs on an enlarged scale, we leave behind us the most primitive among the native Eskimo south of Bering strait.

In the Nushegak district, named after the third river comprised in the Kuskokwim division, we find everywhere traces of long and intimate intercourse with the Russians, who made this valley and a series of lakes their highway of trade, connecting Bristol bay with Kaluakovsky Rédoute and Saint Michael.

The houses in all of this district outside of the missionary settlement of Nushegak are much the same as in the other northern divisions, and may be described as follows: A circular mound of earth, grass-grown and littered with all sorts of household utensils, a small spiral coil of smoke rising from the apex, dogs crouching upon it, children climbing up or rolling down, stray morsels of food left from one meal to the other, and a soft mixture of mud and offal surrounding it all. The entrance to this house is a low, irregular, square aperture, through which the inmate stoops and passes down a foot or two through a short, low passage onto the earthen floor within. The interior generally consists of an irregularly-shaped square or circle twelve or fifteen or twenty feet in diameter, receiving its only light from without through the small smoke-opening at the apex of the roof, which rises, tent-like, from the floor. The fire-place is directly under this opening. Rude beds or couches of skins and grass mats are laid, slightly raised above the floor, upon clumsy frames made of sticks and saplings or rough-hewn planks, and sometimes on little elevations built up of peat or sod. Sometimes a small hallway with bulging sides is erected over the entrance, where by this expansion room is afforded for the keeping of utensils and water-vessels and as a shelter for dogs. Immediately adjoining most of these houses will be found a small summer kitchen, a rude wooden frame, walled in and covered over with sods, with an opening at the top to give vent to the smoke. These are entirely above ground, rarely over five or six feet in diameter, and are littered with filth and offal of all kinds, serving also as a refuge for the dogs from the inclement weather.

In the interior regions, where both fuel and building material are more abundant, the houses change somewhat in appearance and construction; the excavation of the coast houses, made for the purpose of saving both articles just mentioned, disappears and gives way to log structures above the ground, but still covered with sod. Living within convenient distance of timber, the people here do not depend so much upon the natural warmth of mother earth.

The coast between the Togiak and the Nushegak is very sparsely peopled, but a few small villages are located in the large bays of Ooallikh and Kulluk. The inhabitants of these settlements derive their sustenance from both sea and land, making long journeys in their kaiaks to islands and banks on the sea, the resort of the seal and the walrus, while on the land they hunt the brown bear, the wolf, the fox, and the reindeer. For their clothing they depend upon the ground-squirrel, and occasionally the traveler sees a parka or shirt-like garment made of the breasts of sea-fowls, cormorants, gulls, and other birds living in millions on the steep, rocky coast.

On the upper Nushegak river and around the numerous lakes from which its waters flow a greater variety of fur-bearing animals and game exists, the marten, mink, wolverine, beaver, land-otter, wolf, and bear, and three varieties of the fox being still found here in ample numbers. It is owing chiefly to the indolent habits of the people, who are much given to festive assemblies, where singing and dancing are freely indulged in, that the quantity of furs secured from this district is quite small. A single trading post at Alexandrovsk's Rédoute has drained all

this extensive interior region for years past, and the trader stationed there asserts that he did as much business in walrus tusks from the coast as in furs from the interior.

The salmon family, the great feeder of all the Alaskan people, frequent in astonishing numbers the Nushegak and other streams emptying into Bristol bay. The facilities for building traps and weirs are also extraordinary, and American fishermen have for some years been engaged here every season in reaping a rich harvest and shipping the fish, salted in barrels, to market. Hundreds of barrels have been filled with a single clean-up of the trap. The only drawback to this business is the short period over which the run extends, necessitating the employment of a very large number of hands while it lasts. On the Ignashuk river, entering Bristol bay from the westward, not more than 40 natives gather their winter store of dried fish on the river.

The walrus, above referred to, are killed only when they leave their natural element and resort to the secluded sandy beaches and bars during the breeding season.

For the temperature of the Kuskokvum division I have but very unsatisfactory data. In the whole valley of the Kuskokvum no observations have been taken, but at Alexaudrovsk station, on the Nushegak river, I succeeded in obtaining a set of monthly means of temperature covering the period from September, 1879, to August, 1880, inclusive. These observations were taken by Mr. J. W. Clarke, the agent of the Alaska Commercial Company at that place, as follows:

	Deg. F.
September, 1879.....	45.1
October, 1879.....	32.0
November, 1879.....	24.8
December, 1879.....	11.5
January, 1880.....	1.5
February, 1880.....	14.2
March, 1880.....	21.2
April, 1880.....	26.5
May, 1880.....	36.3
June, 1880.....	46.5
July, 1880.....	54.1
August, 1880.....	53.0

The observer remarked that the winter of 1879-'80 had been unusually severe. Another set of mean temperatures, covering the winter months, is as follows:

	Deg. F.
November, 1878.....	26.1
December, 1878.....	26.6
January, 1879.....	20.7
February, 1879.....	10.0
March, 1879.....	23.7
April, 1879.....	29.1
May, 1879.....	35.8

I append a tabulated list of the villages and stations in this division, with their population, as follows:

KUSKOKVIM DIVISION.

Settlements.	Location.	Total.	Whl'e.	Creole.	Aleut.	Athabas-kan.	Eskimo.
Total.....		8,911	3	111	255	506	8,036
Nanivak Island.....	Bering sea.....	400					400
Tauunak.....	Nelson Island.....	8					8
Kaliokhlogamute.....	Nelson Island.....	30					30
Kashbigalagamute.....	Nelson Island.....	10					10
Nulakhitolagamute.....	Yukon delta.....	25					25
Aginkchugamute.....	Yukon delta.....	35					35
Chiehingamute.....	Yukon delta.....	6					6
Challitmate.....	Yukon delta.....	60					60
Anogogmute.....	Yukon delta.....	75					75
Kouigauagamute.....	Yukon delta.....	175					175
Koolvagavlgamute.....	Yukon delta.....	10					10
Kluagamute.....	Kuskokvum river.....	60					60
Village at headwaters.....	Kuskokvum river.....	50				50	
Napalmute.....	Kuskokvum river.....	60				60	
Roamlug Koltchane.....	Kuskokvum river.....	35				35	
Kalmakovský Rédoné.....	Kuskokvum river.....	12	2	2		3	5
Kokhlokhoktobpagamute.....	Kuskokvum river.....	51					51
Toolooka-anahamute.....	Kuskokvum river.....	59					59
Okbogamute.....	Kuskokvum river.....	130		3			127
Kaltkhangamute.....	Kuskokvum river.....	106					106
Oogovlgamute.....	Kuskokvum river.....	206					206

KUSKOKVIM DIVISION—Continued.

Settlements.	Location.	Total.	White.	Creole.	Aleut.	Athabascan.	Eskimo.
Single house.....	Kuskokvim river.....	10	.....	.....	.....	.....	10
Tookhlagamnte.....	Kuskokvim river.....	92	.....	.....	.....	.....	92
Single house	Knskokvim river	10	.....	.....	.....	.....	10
Kwlgalagamnte.....	Knskokvim river	314	.....	.....	.....	.....	314
Tuluksak	Knskokvim river	150	.....	.....	.....	.....	150
Akkiagmute.....	Kuskokvim river.....	175	.....	.....	.....	.....	175
Paimute	Knskokvim river.....	30	.....	.....	.....	.....	30
Kik-khtagamute	Knskokvim river.....	232	.....	.....	.....	.....	232
Kuljkhingamute.....	Kuskokvim river.....	75	.....	.....	.....	.....	75
Koogamute	Kuskokvim river.....	215	.....	.....	.....	.....	215
Mumtrekhlagamnte station.....	Knskokvim river	29	.....	.....	.....	.....	29
Mumtrekhlagamute village.....	Kuskokvim river	41	.....	.....	.....	.....	41
Napasklagamute.....	Knskokvim river	196	.....	.....	.....	.....	196
Napahlagamnte.....	Knskokvim river	98	.....	.....	.....	.....	98
Lomawigamute.....	Knskokvim river	81	.....	.....	.....	.....	81
Taghiaratzioramnte.....	Kuskokvim river	52	.....	.....	.....	.....	52
Naghikhlavigamute.....	Kuskokvim river	193	.....	.....	.....	.....	193
Akoolligamute	Kuskokvim river	162	.....	.....	.....	.....	162
Kaklmiyagamute.....	Knskokvim river	8	.....	.....	.....	.....	8
Shovenagamute.....	Kuskokvim river	58	.....	.....	.....	.....	58
Kik-khnigamute	Kuskokvim river	9	.....	.....	.....	.....	9
Apokaganute	Kuskokvim river	94	.....	.....	.....	.....	94
Chimiqaganute	Kuskokvim river	71	.....	.....	.....	.....	71
Illutagamute.....	Kuskokvlu river	40	.....	.....	.....	.....	40
Kusk-kvagnmute.....	Kuskokvlm river	24	.....	.....	.....	.....	24
Shineyagamute	Knskokvlm river	40	.....	.....	.....	.....	40
Qulnehabamute.....	Knskokvml bay	83	.....	.....	.....	.....	83
Agaligamute	Kuskokvlm bay	120	.....	.....	.....	.....	120
Takiketagamnle.....	Kuskokvlm bay	21	.....	.....	.....	.....	21
Kl-changamnte.....	Kuskokvlm bay	18	.....	.....	.....	.....	18
Mumtrahamute.....	Good News bay	162	.....	.....	.....	.....	162
Tzahavagamute.....	Bering sea bay	48	.....	.....	.....	.....	48
Azlavlagamute.....	Azlvigiaik river	132	.....	.....	.....	.....	132
Toglagamute	Togiak river	276	.....	.....	.....	.....	276
Ikalilukha	Togiak river	192	.....	.....	.....	.....	192
Tunnatkhpnuk.....	Togiak river	137	.....	.....	.....	.....	137
Kassiamnute	Togiak river	615	.....	.....	.....	.....	615
Nulato-k	Togiak river	211	.....	.....	.....	.....	211
Kissalakh	Togiak river	181	.....	.....	.....	.....	181
Anungannok	Togiak river	214	.....	.....	.....	.....	214
Togiak station	Bering sea	24	.....	4	2	.....	18
Ooallikh	Bering sea	68	.....	.....	.....	.....	68
Kuuluk	Kulluk bay	65	.....	.....	.....	.....	65
Igushuk	Igushek river	74	.....	.....	.....	.....	74
Anagnak	Nushegak river	87	.....	.....	.....	.....	87
Nushegak (Alexandrovsk)	Nushegak river	178	1	86	.....	.....	91
Kannik	Nushegak river	142	.....	.....	.....	.....	142
Kaknak	Nushegak river	104	.....	.....	.....	.....	104
Akulivikchuk	Nushegak river	72	.....	.....	.....	.....	72
Agivivak	Nushegak river	52	.....	.....	.....	.....	52
Kalignak	Nushegak river	91	.....	.....	.....	.....	91
Molchatna villages	Molchatna river	180	.....	.....	180	.....	.....
Akulihakhpuk	Lake of same name	83	.....	.....	.....	.....	83
Ekuk	Bristol bay	112	.....	.....	.....	.....	112
Koggung	Kylechak river	29	.....	.....	.....	.....	29
Kaskinakb	Kylechak river	119	.....	.....	.....	.....	110
Cblkak	Ilyamna lake	51	.....	.....	51	.....	.....
Ilyamna	Ilyamna lake	49	.....	13	.....	36	.....
Kichlik	Kichlik lake	91	.....	.....	91	.....	.....
Paugwik (two villages)	Naknek river	192	.....	.....	.....	.....	192
Ik-kbagmnte	Lake Walker	162	.....	.....	.....	.....	162
Igagik	Aliaska peninsula	120	.....	2	.....	.....	118
Oganashik	Aliaska peninsula	177	.....	1	176	.....	.....
Oonangashik	Aliaska peninsula	37	.....	.....	87	.....	.....
Mashlikb	Aliaska peninsula	40	.....	.....	40	.....	.....

The superficial area of the Kuskokvim division is 114,975 square miles, and its total population 8,911. These figures would indicate a proportion of 1 inhabitant to every 13 square miles. The number of whites and creoles in this division (114 in all) is too small to take into consideration in this connection.

THE ALEUTIAN DIVISION.

Before proceeding eastward along the continent of Alaska in our brief survey of the geographical divisions of the territory, we turn our attention to the Aleutian division, comprising the Aleutian islands, from the Shumagin group, in the east, to the island of Attoo, in the extreme west, and also a small section of the Alaskan peninsula at its southern extremity. The islands appear to be a mere continuation of the main Alaskan range of mountain groups. Many of these islands contain volcanic peaks, and some of them are still in a state of moderate activity. Slight shocks of earthquake are common throughout the chain, but many years have elapsed since the occurrence of violent phenomena traceable to volcanic action. All the islands are mountainous, and many of them exhibit snow-covered peaks of from 4,000 to 8,000 feet in height. The entire division is treeless, dwarfed specimens of creeping willow being the nearest approach to timber found anywhere on the islands or mainland. The soil consists of vegetable mold, clays, volcanic detritus, and here and there a light calcareous loam. Grasses of all kinds grow in great abundance, except in the interior valleys and plateaus, where a lack of drainage has allowed dense masses of sphagnum to prevail over the perennial grasses natural to the soil. The surface of the soil everywhere, even where very tall grasses seem most luxuriant, is cut up into hummocks to such a degree that to travel on foot is exceedingly difficult and tiresome.

No mineral has been found in this division with the exception of its eastern extremity, where on the island of Ounga deposits of coal have been discovered, and thoroughly prospected through a long series of years. The quality of the coal was such, however, as to make competition with other coal regions of the Pacific coast impossible.

The abundance of grass throughout this region would naturally lead to the conclusion that it might be adapted to cattle-breeding or the dairy industry, especially since the mean temperature is not at all low; but the winters are sufficiently prolonged to necessitate the feeding of cattle with hay for six or seven months of the year, and the dampness of the climate makes the curing of hay very uncertain and laborious. Under the auspices of the Russian government a weather average of seven years was obtained and recorded by the missionary Veniaminof. This has the remarkable showing of 53 clear days, 1,263 cloudy days, and 1,230 days with snow, rain, or hail. At Oonalashka, the only place where cattle are now kept by the priest and by the traders, hay can be obtained from San Francisco cheaper than it can be cut and cured on the spot. Potatoes have not thus far been successfully grown in any part of this division; but whether this be due to the quality of the soil or to the climate, or to lack of proper attention to the subject, I am not in a position to decide. I merely note the fact.

The people inhabiting this district, though distinct in language and, to a certain extent, in habits, are undoubtedly of Eskimo origin. They were the first tribe subjugated by the Russian adventurers who invaded this region about the middle of the last century, and, having maintained ever since that time the most intimate relations with their conquerors, their individuality as a race or tribe has almost completely disappeared.

In their connection with the Russian church the people of this division are divided into two parishes and one independent church organization. The parishes are Belkovsky, in the east, comprising the Shumagin group of islands and the settlements on the southern extremity of the Alaskan peninsula, and Oonalashka parish, in the west, comprising all the islands from Avatanok to Attoo. The parish churches are located at Belkovsky and Oonalashka or Iuliuk village, but nearly every settlement contains a small chapel, where prayers are read by unpaid native subordinate members of the clergy. An independent organization exists on the seal islands, where the natives maintain a priest and his assistant at their own expense, and with some assistance on the part of the lessees of the islands have erected a fine church.

The easternmost permanent settlement of this division is situated in Belkovsky parish, on Delarov bay, on the island of Ounga, one of the Shumagin group. The Ounga settlement has a population of nearly 200 souls, principally creoles, and presents quite an imposing appearance, owing to quite a number of neat frame buildings erected by prosperous sea-otter hunters. The most important industry of this and the adjoining settlements is the chase of the sea-otter, of which about 600 are secured every year from a range extending over the whole Shumagin group. The outlying islands and rocks, especially those of Simeonof, Nagaï, and Vosnessensky, are the favorite hunting-grounds. The native hunters have been re-enforced here by fifteen or twenty white men, who, in order to circumvent the letter of the law, which requires that none but natives shall hunt fur-bearing animals in Alaska, have married native women, and by the special authority of the Secretary of the Treasury are admitted to the same privileges as the people of the country. Being more energetic, and at the same time more reckless, in their pursuit of these valuable animals, these white men have been very successful, and many of them have built or purchased smart little sailing-vessels, enabling them to continue their hunting at all seasons of the year, even when the Aleut is kept at home by the gales and storms of winter. The final effect of this indiscriminate hunting must, of course, be extermination. Limited quantities of fox-skins of various shades are also seen on the island of Ounga.

The coal-veins existing not far from the Ounga settlement on Humboldt bay have already been referred to.

On the adjoining island of Korovinsky there is a small settlement inhabited altogether by creoles, whose ancestors had formed an agricultural colony under the auspices of the Russian Fur Company. Up to the transfer of

the territory these people were not allowed to hunt, and were compelled to maintain themselves by the cultivation of potatoes and turnips and by keeping a few head of cattle, but since that time they have gradually abandoned most of their agricultural pursuits and turned their attention to the more profitable pursuit of the sea-otter.

On Popof island there is a station of fishermen in the employ of a San Francisco firm engaged in the cod-fishery on the Shumagin banks. The fishing is done to a great extent in small boats on the more shallow banks within a short distance from shore, and the fish are carried to San Francisco in schooners. The number of fish taken annually varies between 500,000 and 600,000.

The trade of Onnga is divided between two rival companies, who have established permanent stores, and many private traders, who pay occasional visits in schooners and sloops.

The next settlement to the westward, named Vosnessensky, is situated on the small island of Peregrebnoi. The population of this village does not exceed 50 souls, but they secure between 60 and 70 sea-otter skins every year, and live in comparative affluence.

One of the most important points in the Aleutian division is the settlement of Belkovsky, situated on the southern end of the Alaska peninsula. This is a village containing 300 inhabitants, a fine, new church, and many good log and frame buildings. The houses are perched on the summit of a bluff clinging to the flanks of the mountains. There is no sheltered harbor here, or even a safe anchorage for ships, and the gales and storms sweep over the settlement with uninterrupted fury, but the hardy sea-otter hunters select this spot as the one most convenient for setting out upon their expeditions to the outlying rocks and cliffs within a circuit of 50 miles or more. The sole industry of this place is, of course, the chase of the sea-otter. The large number of from 1,900 to 2,000 of these rare and costly skins are annually sold at the three trading-stores located in the village.

Under some civilizing influence or home restraint this ought to be, comparatively speaking, a wealthy community, but, as the case now stands, every cent of their surplus earnings that is not gathered in for the support of the church by the priest is squandered by the people in dissipation and for useless luxuries. The best and most costly styles of ready-made clothing are in common use, and only when at sea on their hunting expeditions do the natives wear home-made water-proof garments.

Some 50 or 60 miles to the southward of Belkovsky lies the island of Saunakh, the richest hunting-ground of this whole division. Numerous hunting parties from the islands and the mainland to the east and west can be found here at all times of the year, encamped in tents or rude turf and sod shelters, watching for the rare intervals of weather sufficiently fine to allow them to put out to sea in search of their quarry. The trading companies have established here small depots of supplies, in order to take from the hunters every excuse for leaving the island and neglecting their business until they have collected a sufficient number of skins to warrant their departure for localities affording better opportunities to spend their money. In many instances these parties remain at Saunakh from three to five months at a time, and consist chiefly of men, with one or two women to do camp duty and to provide a few comforts for the drenched, chilled, and exhausted hunter when he returns from the surf-beaten reefs and rocks.

Just north of Belkovsky is the small village of Nikolaevsky, containing less than 50 inhabitants, while to the southward, but still on the mainland of the peninsula, there is the larger settlement of Protassof, or Morshevoi. The latter place contains nearly 100 people, who are successful sea-otter hunters, securing an average of 500 skins every year. These people are equally as opulent and extravagant as their neighbors at Belkovsky, and are even more dissolute. In spite of an average annual revenue of nearly \$1,000 to each family, the whole place presents an aspect of great poverty, misery, and debauchery, which has put its stamp more firmly and more shamefully upon the people of this place than elsewhere in all Alaska.

Near this village, less than half a mile away, there is a series of warm sulphur springs and ponds, which would afford the sickly natives partial or permanent relief could they only be induced to bathe therein; but, while there is not one man, woman, or child in the village free from cutaneous disease of some kind, not one of them can be induced to make the exertion necessary to try the efficacy of the waters.

The natural food resources of this whole region—fish, berries, seal, etc.—are abundant and varied. Not far from Morshevoi walrus can be secured with but little difficulty, and large herds of reindeer formerly came down at regular intervals from the upper peninsula to its westernmost point, and even crossed the strait to Oonimak island, but of late, for some cause unknown, they have ceased to make their appearance. The old men and youths not absorbed by the sea-otter parties trap foxes all over the mountains and rolling plains and shoot a bear occasionally, while the women are busily engaged in collecting drift-wood and brush, the only fuel found in the country.

Passing to the westward from Belkovsky the traveler first notices the snow-covered peaks of two volcanoes on Oonimak island, of which the larger is Mount Shishaldin, rising to a height of 8,000 feet. Smoke rises constantly from the crater of this mount, and shocks of earthquake occur very frequently. The island is uninhabited, and has been in that condition for the greater part of the present century, though it is richer than many other islands of the Aleutian chain in natural means of sustaining life.

Foxes are quite plentiful here, and sea-otters frequent the reefs and points, but ever since, nearly one hundred years ago, almost all the inhabitants of four or five populous villages were massacred by the Russian prouynsheniks, a superstition dread seems to prevent the Aleutian from making a permanent home at Oonimak.

Three small islands intervene between Oonimak and Oonalashka islands—Avatanok, Akoon, and Akutan—with a small settlement of sea-otter hunters on each.

Oonalashka island, next in size to Oonimak, is the point of greatest importance in this division, having at its principal village (Ilinlik) the parish church, a custom-house, with the port of entry for all western Alaska, two large trading establishments, wharves, and other commercial facilities. Nearly all the sea-otters secured from the Shumagins in the east to Attoo island in the west are collected here and shipped to San Francisco.

The bay of Oonalashka, or Captain's harbor, is completely land-locked, and is free from ice at all times of the year. Cod-fish and halibut are plentiful throughout the bay, and herring and salmon crowd its waters in each season. It would seem easy for a small community to exist here on the natural resources alone, but the people of Ilinlik are all sea-otter hunters, going as far as Samalik and other distant hunting-grounds upon expeditions extending over many months. As these men are generally successful the settlement is nearly as prosperous, financially, as that of Belkovsky, but they find themselves in a better condition, owing to the moral influence of the parish priest located here and the example of quite a number of the whites of a better class who have here congregated. The wharves and shipping afford a constant source of revenue to those of the natives who are able and inclined to labor, and nearly all the families are enabled to dispense with the laborious process of gathering drift-wood and small brush for heating and cooking purposes, buying cord-wood imported from Kadiak and coal shipped from British Columbia or San Francisco.

A school, in which both English and Russian are taught, is maintained by one of the trading firms, but the attendance is at best irregular. Nearly 50 per cent. of the adults of Ilinlik, however, are able to read and write in the Aleutian language and a few in the Russian.

The same firm that maintains the school also employs a physician and keeps a well-stocked dispensary, where natives are treated free of charge. This island and the fur-seal islands are the only localities in all Alaska where medical attendance can be obtained.

Experiments in vegetable gardening in Oonalashka island have not been attended with success. From eight to ten cows are kept, but, as already explained above, their sustenance during the winter is obtained with great difficulty.

When first discovered by the Russians this island contained many populous villages, but of these but four remain to day outside of the harbor settlement. The villages of Maknshin, Koshegin, and Chernovsky in the west and Borka in the east are all inhabited by sea-otter hunters, who spend but a small portion of the year in fishing and trapping black and red foxes. Altogether there are between 700 and 800 people on the island of Oonalashka, of which about 25 are white.

As they live here to-day, in their more than semi-civilized condition, each family generally inhabits its own hut or barabara. They have long since ceased to dress themselves in skins or their primitive garments made from the intestines of marine mammals, save at a few points where extreme poverty compels them to wear bird-skin parkas and other garments handed down from ancient times. The visitor to any one of these Aleutian settlements will find its people dressed in "store-clothes", and on Sundays will notice a great many suits of tolerably good broadcloth. The women of the "wealthy" families dress in silks on great occasions, but generally in gowns of cotton fabrics made up with special reference to the latest fashion brought up from San Francisco. Although in their hunting excursions, and frequently when about the village, they still wear the ancient "kamleyka", or water-proof shirt, made from intestines, as also moccasins or boots made of the throats of seals and soled with the tough flippers of the sea-lion, they all dress up on Sundays and on the church holidays in calfskin boots and ladies' kids and slippers, shipped from San Francisco. Broad-crowned caps with a red band are still much in vogue among the male exquisites, evidently a legacy of former times, when Russian uniforms were seen on these shores. As a rule, however, the males dress soberly, with but little attention to display, color, or ornamentation, though they lavish some skill and taste in trimming their water-proof garments used in the chase or in traveling; as also the seams of the "kamleikas", the skin-boots, and other water-proof covers, including those of their canoes and bidarkas, the latter being frequently embellished with tufts of gaily-colored sea-bird feathers and delicate lines of goose-quill embroidery.

The women have a natural desire for bright ribbons and flashy jewelry, such as the traders supply them with; and the extent to which they deck their persons with gewgaws and trifles of this kind is only limited by their means. With the exception of a few whose lords have been exceptionally fortunate in capturing sea-otters they seldom wear bonnets or hats; but around their houses or at church they have handkerchiefs of cotton or silk tied over their heads, the married women, after the Russian peasant fashion, drawing them tightly about the head in the shape of a turban, almost completely hiding the hair from view, while the unmarried girls tie them loosely over the top of the head. The hair, when attended to at all, is put up in braids and tied up behind.

The interior of Oonalashka island consists of a labyrinth of ravines and gulleys with steep, grass-grown hillsides and masses of volcanic rock and lava, deeply indented and cut in every direction by sparkling streams. Deep snow in winter and a dense growth of vegetation in summer make traveling across the island exceedingly difficult; and it is safe to assert that scarcely one in a hundred of the inhabitants ever penetrates to within a mile of the sea-shore.

The volcano Makushin, situated between the village of that name and Iliniuk, though smoking occasionally, has had no eruption during the present century.

The next settlement to the westward is that of Nikolsky, on the southwest coast of Umnak island. When the Russians first arrived in this vicinity this island was the site of no less than eleven Aleutian villages and settlements, and the people, who at first welcomed their unknown visitors in the most friendly manner, became subsequently enraged at the treatment received at their hands and offered a stubborn resistance. The struggle here, as elsewhere, resulted in an almost total extermination of the original inhabitants, and Nikolsky, with its 120 inhabitants, is all that is left to-day of a once numerous people. What these people have lost in numbers they have gained in prosperity, selling every year, as they do, their 120 or 150 sea-otter skins to the rival trading firms at excellent prices. Black, cross, and red foxes are quite abundant, and the straits on both sides of the island contain excellent cod-fish and halibut banks. Immediately back of the village, and connected with each other, there are several fresh-water lakes, with an outlet to the sea through a shallow, meandering stream that passes down through the settlement, and at certain seasons of the year trout and salmon run up in such numbers, and with so much persistency, that they fairly crowd themselves out upon its banks, leaving nothing for the native to do but to stoop down and pick them up. The characteristics of the natives are the same as those described in the review of Oonalashka. They support their chapel, as in other villages, and have their prayers read by one of their own number. Drift-wood is less plentiful here than in other districts, and this scarcity involves additional labor on the part of the women, who must gather the "chiksha", or creeping tendrils of the empetrum. The men of Umnak must also make long journeys to other islands to capture sea-lions and seals, and on that account are not so well supplied with bidarkas.

In the year 1878 the island was disturbed by a volcanic eruption, and a small mud volcano arose between the prominent volcanic peak near the southern end of the island and the village. In 1880 both the old and the new peaks were still smoking, and the latter was sputtering. During the shaking and trembling connected with these phenomena the fish seemed to have left the shores, and the inhabitants were for a season obliged to go to adjoining islands to lay in their winter supply. Quite a number of young fur-seals are seen here annually by the natives, these animals passing down from the waters of Bering sea into the northern Pacific ocean during the autumn and early winter. The flesh of these animals is greatly prized, and the skins make excellent clothing and bedding.

The next settlement in order as we proceed westward is the village of Nazan, on Atkha island. The people of this island have always spoken and still speak a dialect differing considerably from that of the Oonalashka people. This difference was deemed sufficiently important by Veniaminof, the missionary of these islands, to have translations made into it of the principal books of prayer and portions of the New Testament used in the church services; and it is interesting to observe how families which have been separated for generations from their kindred on the fur-seal islands, or in the Oonalashka district, or even on the Aliaska peninsula, have preserved their distinct idiom and transmitted it to their children, who to-day speak both dialects distinctly and are proud of the accomplishment.

The village of Nazan contains 230 inhabitants, who are lodged in houses or barabaras of rather respectable appearance. They have a well-preserved little church, and give every indication of being a thrifty and prosperous community. Between 175 and 200 sea-otter skins are annually sold at the two trading-stores.

Removed as they live from the evil influences of "too much civilization", the men of Atkha constitute perhaps the finest body of sea-otter hunters in the country. They make long journeys from their home, being carried on sailing-vessels with all their hunting paraphernalia, bidarkas, etc., to distant islands, where they establish temporary camps and scour the outlying reefs and points, where their experience teaches them to search for the shy sea-otter. These hunters remain in camp, engaged in the chase for periods of many months at a time, until, in accordance with previous agreement with the traders, the vessels that carried them out return to take them back. On the return of the party the hunters tally their skins, settle all outstanding obligations, make their donations to the church, and speedily spend the surplus upon the outer and the inner man.

The island of Atkha possesses also other natural resources. Those of the male population who do not go out with the sea-otter parties secure quite a rich harvest of fox-skins, the black, cross, and red fox being quite numerous; and even the blue fox (*Vulpes lagopus*), now confined to but few localities throughout Alaska, is still found here.

The women of Atkha are quite expert in the manufacture of fine grass cloth and grass ware, and for this purpose they gather the grasses, dry and prepare them with the greatest of care, and spare no amount of labor and unlimited patience in the execution of their designs, which take the form of cigar-cases, baskets, mats, and the like. There is something exceedingly tasteful and exquisite in the delicate blending of colors and patterns which the grass-workers of Atkha employ in the production of their wares, and an instance is known to me of a work-basket being made to order for a trader by an old native woman as the very best evidence of her skill. She was engaged upon the work six years, and it is unnecessary to say that the basket was a remarkable exhibition of beautiful handicraft.

Formerly the people now located at Nazan lived at Korovinsky bay, on the north side of the island, where the first church was established as early as 1826; but a few years ago, when both fish and drift-wood were becoming

scarce, in order to better themselves, they removed to their present village-site. Where they are now the Alaska mackerel is quite abundant, and quantities of this palatable fish are salted in barrels and shipped to California.

At one time under the Russian *régime* Atkha was quite an important place: it was the central depot of the western district, the jurisdiction of which extended westward as far as the Kurile islands, and the Aleuts now on the Russian seal islands of Bering and Copper, off the Kamchatka coast, are all descendants of natives of Atkha. The Russians introduced cattle and goats here as an experiment in those days. The latter became very unpopular with the timid Aleuts on account of their pugnacious disposition and a morbid propensity for feeding upon the grasses and flowers that grew on the earthen roofs of the barabarns, frequently breaking them in or causing serious leaks. Though there is an abundance of nutritious grasses all over the island, the stock-raising experiment was allowed to lag, and finally, a short time after the transfer of the country to the United States, the last of the bovine race found its way into the soup-kettle and to the tables of the traders.

The numerous islands lying between Atkha and Oonuak in the east and Atkha and Attoo in the west are uninhabited, though nearly all show evidence of ancient settlements. At the present time they are each visited in succession by the sea-otter hunting parties of Atkha.

The extreme western settlement of the United States, or of North America, is located on the island of Attoo. This was the first land made and discovered by the Russians as they navigated eastward from the Commander islands, on the coast of Kamchatka. Nevodchikof, a trader and navigator, landed here first in 1747. At that time the adjoining island of Agatoo was also inhabited by the Aleutians, but to-day the only settlement is a village of little over one hundred inhabitants at the head of the land-locked harbor of Chichagof. These people are peculiarly perhaps the poorest of the whole Aleutian race, the sea-otter, upon which they depend entirely for the means of purchasing such articles of dress and food as they have learned to regard as necessities, having dwindled down to a mere fraction of the number formerly found on the hunting-grounds. The able-bodied men of the village now secure an annual average of only 20 or 25 sea-otter skins. Though the volume of their trade with white men is exceedingly limited, nature supplies them with a profusion of food, and ample supplies of drift-wood to serve as building material and fuel. Cod, halibut, and Alaska mackerel occur here in great abundance, and a small species of salmon ascends the shallow streams every year. The women and children gather large stores of eggs of the aquatic birds that breed along the cliffs and rocky shores, and for many years the most provident among the villagers have caught wild geese alive, clipped their wings, and domesticated them. Their present hunting-grounds extend over only rocks and islets some distance to the eastward and southward, but in spite of this disadvantage they are strongly attached to the place of their birth, and have declined many offers made by traders to remove them to more favorable localities for hunting the sea-otter. Large numbers of sea-lions are killed annually in the immediate vicinity, and nearly every particle of these huge animals can be put to some use. Of the skins they make boat-covers and boots, and also use them in repairing the roofs of their houses; the intestines are made into water-proof garments, the sinews taking the place of thread, while the meat is a very palatable article of diet. Though poor, these people impress the visitor in many respects more favorably than their wealthier and better situated brethren in other parts of the Aleutian chain. The chief of the village, or "toyon", acts in the triple capacity of trader, leader in the chase, and leader in the church. Naturally the consumption of flour, sugar, tea, and woolen and cotton goods by this community is limited by the causes above referred to, and for clothing they have recourse to a great extent to the primitive bird-skin parkas and other skin dresses and garments such as were made and worn by their ancestors.

On account of the scanty supply of sea-otters the natives have turned their attention to the protection and preservation of the blue fox, and of these they now kill about 200 annually, with every prospect of increasing their stock in hand. The island itself supplies them with nothing except a great abundance of berries in their season, principally the salmon berry and the *Empetrum nigrum*. The grasses found on all these islands seem to grow here, with exceptional excellence, as high as the waists and even the heads of the people, and are used largely by the people in the manufacture of mats, rugs, screens, etc., adding very much to their domestic comfort; they also weave or plait a great many handsome specimens of grass-work in the shape of baskets.

The islands of the Pribylaf group comprising the breeding-grounds of the fur-seal, now occupied by a wealthy trading firm under lease from the United States government, are four in number, only two of which are frequented by the seals. Saint Paul and Saint George contain all these so-called rookeries, while Otter and Walrus islands are never visited by the millions of these animals playing in the waters about them. The subject of the fur-seal industry and its commercial and physical aspects has been fully discussed in a monograph written by Mr. H. W. Elliott, under the direction of the Superintendent of Censuses, and it only remains to say here that the business has been so thoroughly worked up and systematized as to bring it to a par with a well-conducted cattle ranch on a large scale—with this difference, perhaps, that greater care is lavished upon the seals, and greater caution with reference to their comfort than is generally bestowed by farmers upon their cattle.

The people now classed as natives of the islands are in reality natives and descendants of natives of the various islands of the Aleutian division, a majority having sprung from Atkha and Oonalashka. When the Russian navigator Pribylaf discovered the islands, toward the end of the last century, he found them uninhabited, and in order to slay and skin the vast numbers of seals and sea-otters then found there it was necessary to import laborers

from the more populous districts. Under the Russian *régime*, when these sealers were lodged in wretched subterranean hovels and were fed upon seal meat and blubber the year round, it was considered a hardship to be stationed there, and the managers of the Fur Company found it necessary to relieve their force from time to time. Since the islands have fallen under the direct management of the United States government the condition of the people has been improved to such an extent as to stop all applications for removal from the islands and to create a great demand on the part of the people of other islands to be transplanted there. Under the terms of the lease the lessees have erected comfortable cottages for all the families, and provide them throughout the year with fuel and an abundant supply of salted salmon free of charge. In addition to this, each family derives from the compensation paid by the lessees for the labor of killing and skinning the seals, which is done upon a co-operative plan devised by the natives themselves, a cash income of from \$350 to \$450.

Many other opportunities arise at various times during the year for adding to their income by labor of various kinds at a good rate of wages. Whatever necessities, comforts, and luxuries the sealers may desire to procure from the stores are sold to them at very reasonable rates. Were it not for the strong propensity for gambling existing among them every sealer would have his bank account, but even now there is quite a respectable list of names upon the books of the company of those who annually draw interest from deposits in the savings banks of San Francisco. A school on each island, maintained by the lessees, under direct supervision of the special agents of the Treasury Department stationed on the islands, exerts its beneficial influence among the younger members of these isolated communities. Many of the boys and girls can exhibit quite respectable specimens of penmanship, and even composition in the English language. These were produced at school, and under great pressure; but if the visitor attempts to address one of these youngsters in English the reply will be a grin and a shake of the head. They have not thus far learned to apply the knowledge acquired. The average attendance at the school on Saint Paul is 69, and at that on Saint George 23, out of a total population of 390.

The islands are of volcanic origin, and almost entirely barren, with the exception of a scant covering of coarse grass on sheltered slopes, and as the climate is exceedingly rigorous and the atmospheric conditions very unfavorable no cultivation of the soil can ever be thought of. There is an abundance of fish in the waters about the islands, but as soon as the ice disappears the seals come, and where millions of these animals, each of which can devour from 15 to 20 pounds a day, are feeding, there cannot be much left for the human beings on shore.

On Saint George only there is quite a large supply of birds' eggs in the breeding season, and these, with a few walrus secured from Walrus island, are the only additions that nature makes to the larder of the islanders.

Blue foxes have been transplanted to these islands, and have been carefully protected and preserved from deterioration by the admixture of white foxes that sometimes reach the islands over the ice. At present about 600 of these animals are killed annually, making another addition to the revenues of the community.

I append a tabulated list of the villages and stations in this division, with their population, as follows:—

ALEUTIAN DIVISION.

Settlements.	Location.	Total.	White.	Creole.	Aleot.
Total.....		2,451	82	479	1,890
Attoo.....	Attoo island.....	107	1	32	74
Nazan.....	Atkha island.....	236	2	14	220
Nikolsky.....	Oumnak island.....	127	2	8	117
Ilulink.....	Oonalashka island.....	406	14	162	230
Makashin.....	Oonalashka island.....	62	1	30	31
Koshlgjin.....	Oonalashka island.....	74	1	.....	73
Chernovsky.....	Oonalashka island.....	101	3	4	94
Borka.....	Oonalashka island.....	140	1	6	133
Akutan.....	Akutan island.....	65	2	.....	63
Akoon.....	Akoon island.....	55	1	.....	54
Avatanok.....	Avatanok island.....	19	.....	.....	19
Saint Paul.....	Pribylaf Island.....	298	14	.....	284
Salot George.....	Pribylaf island.....	92	4	.....	88
Belkovsky.....	Allaska peninsula.....	268	11	89	168
Nikolalevsky.....	Allaska peninsula.....	43	.....	.....	43
Protasoff.....	Allaska peninsula.....	100	2	21	77
Vosnessensky.....	Vosnesseosky island.....	22	1	.....	21
Ounga.....	Ounga island.....	185	15	69	101
Korovlnsky.....	Korovin island.....	44	.....	44	.....
Pirate cove.....	Popof island.....	7	7	.....	.....

The superficial area of the Aleutian division is 14,610 square miles, and the total population 2,451, indicating a proportion of 1 inhabitant to 6 square miles, 1 white to 178 square miles, 1 creole to 30½ square miles, and 1 Aleut to 7½ square miles.

THE KADIAK DIVISION

This division includes the northern half of the Alaska peninsula for west of the narrow isthmus between Port Steller and Kodiak, both the Kodiak group of islands, the Seward peninsula, and the coast of the mainland opposite to Mount Saint Elias. The western and southern slopes of the great Alaska coastal mountain and the Yukon and its numerous mountain groups of the peninsula.

From the head of Bristol Bay, where the Bristol river discharges, the waters of the inland coast of Hydaburg to Port Moller, the northernmost point of Alaska, are cold and nicely sheltered. The border of the whole coast is very steep, and only less exposed to the ocean than at the same latitude further north with the inhabitants of the Inianas or Eskimos, the people here live less much in the interior towns.

The large salmon fisheries of the coast of all waters of the Arctic, providing the inhabitants with independent food and other material, no doubt, the larger the commercial activity of the region. As already mentioned above, these salmon cannerys are generally situated in the coves of the coastal country, situated very close upon the active ocean sea, so as to invite the gulls and herring gulls which frequent the whole frontier of these waters with their young.

The country beyond Bristol Bay and the upper chain of rivers is interesting along the eastern shore by granite mountains, dotted with lakes fed from the streams (ern fens) in the east, and facing the water in the west. In the northern portion of the peninsula a belt of timber reaches down to the shores of Lake Rockwell, but beyond this the forest disappears, and only the deep ravines exhibit a stunted growth of spruce, aspens, and alder trees. The reindeer breed in these woods, retreating during the winter up to the inaccessible retreats among the snowy peaks of the mountain range, where they are often seen by the trappers, who also follow the deer down to the marshes. During the autumn and winter they seek the vicinity of the lakes and salt marshes, in which they are hunted with comparative ease. These, like deer, caribou, and musk are pursued here for their skins, and the giant brown bear of central Alaska rivals the native fishermen in the destruction of the tiny inhabitants of lake and stream.

The people of Port Moller and Agulik are of the Aleutian tribe, which formerly was more widely distributed along the coast, extending far to the northwest of the Nuknek river and Lake Naknek, in the village situated on one of the borders of the latter lake, the inhabitants still tell the story of the great massacre of "the blood thirsty" Aleuts long ago, who were said in the place of dispute. I witnessed this, with the exception of one man, who told me further details closely, and thus arrived to tell the tale.

The position of the natives led to the discovery of the early date of several early portuguese maps of the peninsula. The Russian records take us back to Bristol bay and Nunivak across the peninsula from Kadiak, and their abundant remains to show that this root of communication had been established long before 1700 past.

During the early days of the Russian-American company's voyage to the north, a large proportion of their traffic was conducted on the coast of Bristol Bay, and thence to the Kuskokwim and Nushagak rivers and Seal River, the chief means of transport being the sledge. In 1741 Longfellow followed the route of the natives, over the ice floes, and it was not until 1770 that Captain John Meares, who was guided by Shetcho, the founder and organizer of the Hudson's Bay Company, for many years the head of the headquarters of that powerful corporation and the rest of the crew of all the Hudson's Bay colonies in the native ports of Alaska, and Baranof's native crew, made the coast along the coast, where he met with English and American whalers among the islands off the coast, trading for furs, and they established themselves on Resurrection Bay on the coast to the southward of the Pribilof Islands, the boundary of Alaska.

The first colony established on the Alaskan coast on these islands founded on Kadiak Island, and from thence extended to regions then unknown to spread the gospel among the natives. A colony of unintermittent influence of Christians among them has now formed there, and is a vestige of European culture and civilization among the natives, and their settlements will compare easily to those of England and Scotland, with most of the little villages of northern Europe. This means, notwithstanding the island is more barren than most other parts of Alaska, the civilization of productive farms and the raising of stock, and the education of the people. At the ecclesiastical

conventions held on the island, the people are mostly of the middle class of the people. At the ecclesiastical

PLATE XI



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LAKE WALKER, ALASKA PENINSULA. — MT KAKHTOLINAT.

settlement of Afognak there is quite an extensive acreage, fenced in, under cultivation; and at the village of Saint Paul, on Wood island, and on Spruce island these farming operations are extending every year. The crops are by no means abundant, and cannot be counted upon as a certainty every year; but there is enough to add much to the comfort of life and a pleasant and wholesome variety to the dietary of the people. Experiments in sheep-raising have also been made with encouraging results, so far as the quality of the wool is concerned; but the increase in lambs is much less than in Oregon or California, and is still more diminished by the ravages of eagles and ravens. As the northern portion of the island of Kadiak and the smaller islands to the northward are timbered, the people here have facilities for ship or boat building, of which they avail themselves to the fullest extent. One or more small crafts can always be found in process of construction, principally upon orders from the prosperous white sea-otter hunters of the Shumagin islands or for the trading firms and private traders. A deputy collector of customs stationed at Kadiak has quite a respectable list of small craft built and registered in the district.

Sea-otter parties are fitted out in nearly every village, and are frequently taken to distant hunting-grounds in sloops and schooners. The old men and youths remain at home and employ their time profitably in hunting bears and trapping foxes, principally of the black and the cross variety. The salmon fishery is increasing in volume with astonishing rapidity, and furnishes labor for numerous hands, whites as well as native males and females. Cod-fish is found nearly everywhere in the shallow soundings of the coast, and forms a great staple of food with the people, but at present it is not exported.

The parish priest of the Russian church located at Kadiak village has under his spiritual jurisdiction nearly the whole of this division, with the exception of the western coast of the Alaska peninsula and the upper portion of Cook's inlet, the latter section being confided to the care of a missionary monk located at Kenai, on the Rédonde Saint Nicholas.

On the coast of the peninsula opposite Kadiak island coal has been found, together with many indications of the existence of petroleum; but if other mineral deposits are hidden within the recesses of the mountains they have thus far escaped the searching eye of the prospector and explorer.

The settlement of Katmai, in this vicinity, was once the central point of transit for travel and traffic across the peninsula. Three different routes converged here and made the station a point of some importance; now Katmai's commercial glory has departed, and its population, consisting of less than 200 creoles and Indians, depend upon the sea-otter alone for existence. The men could have reindeer in plenty by climbing the mountains that rear their snow-covered summits immediately behind them, but they prefer to brave the dangers of the deep and to put up with all the discomfort and inconvenience connected with sea-otter hunting, and in ease of success purchase canned meats and fruit from the trading-store, leaving the deer on the mountain undisturbed.

The people of two villages across the divide, in the vicinity of lake Walker, come down to Katmai to do their shopping and to dispose of their furs, undertaking a very fatiguing tramp over mountains and glaciers and across deep and dangerous streams in preference to the canoe journey to the Bristol Bay stations. Only at long intervals a small party will proceed to Nushegak to visit the Russian missionary stationed there, to whose spiritual care they have been assigned without regard to locality or convenience.

Of the creoles embraced in the parish of Kadiak 103 are reported by the church authorities as being able to read and write in the Kadiak and a small proportion of them in the Russian language.

Northward from the Kadiak group we find a deep indentation of the coast, bounded by a lofty mountain range, with which several volcanic peaks in the westward and the peninsula in the east form the great estuary known as Cook's inlet.

When the Russian traders first penetrated into the recesses of this region under the lead of two rival companies, in 1787 and 1789, they made war upon each other. Scenes of piracy and bloodshed were enacted in swift succession for ten long years, until Baranof, with his iron will and hand, settled all disputes by sending the disputants to Siberia for trial and punishment. Historically this whole region is one of the most interesting in all Alaska. It is also interesting to the ethnologist, from the fact that here are found the only instances of the interior Indian tribes of the Athabaskan family impinging upon the coast. The people known as Kenaitze (Kinnats or Timnats) are strongly defined; but they are a separate people from the Eskimo inhabiting Kadiak and the sea-coast adjoining. The height of the male of the Kenai tribe is greater than that of the Eskimo, and a full-grown man of less than 5 feet 8 inches is rarely encountered. They are slim, lithe, and sinewy; the eyes are set straight in the head; the nose is prominent, frequently aquiline; the mouth is large, with full lips, the chin frequently receding; the skin is very perceptibly darker than that of the Eskimo; they wear their hair, which is thick and coarse, much longer than the natives of Kadiak; and the males gather it into a thick, stubby braid, hanging down the back, thickly smeared with grease and sometimes powdered over with feathers and down.

At the head of the inlet and on the rivers emptying into it from the north we find these people more primitive in their manners and customs, dressing in buckskin shirts and breeches, the men and women almost alike. Many of their hunting shirts and breeches are tastefully embellished with porcupine quills and grass braiding, bead embroidery and fringes, while both nose and ears of the men are pierced for the insertion of the white shells of the dentalium, or hyqua, here called "sukli". This shell was formerly in general demand among the Indian tribes of

the territory, but now this seems to be the only section where there is a steady call for the article. The women are treated well and kindly, but they have much heavier burdens laid upon them in the line of manual labor than those imposed upon their wives by the Kadiak or Aleutian natives. The Kenaitze travel a great deal by land, and the women serve as pack-animals. In their domestic architecture and economy they also differ much from the Eskimo, their houses being always erected above the ground with logs and roofed with bark, the under side of each log being hollowed out, so as to fit down tightly over the round surface of the one beneath. They build their roofs with regular rafters, pitched sufficiently to shed the rain and melting snow, and a fire-place is reserved in the center, with a small aperture directly above it in the roof. The door to this structure is a low, square hole at one end large enough to admit a stooping person, and a bear-skin is usually hung over it, or a plank is placed before it. The floor is generally the natural earth, while around the sides of the room, a foot or two from the ground, and wide enough to allow the people to stretch out upon at night, is erected a rude stage. On this staging they lay grass mats and skins for bedding and covering. This is the most primitive style of dwelling. Those among them who have had frequent intercourse with the trading-posts and villages farther down the inlet have added to their houses wings, or small box-like additions, tightly framed together, with an entrance only from the interior of the larger structure. These little additions, used as sleeping apartments and sometimes as bath-rooms, are furnished with the luxury of a plank floor, and in many instances have a small window of transparent bladder or intestine.

On all the principal hunting-grounds, or along the trails most frequented by the Kenaitze, are found structures similar to those above mentioned, with additions built very compact and low, which serve as places of refuge for the hunter and traveler in times of snow-storm and excessive cold. A party of hunters can retire into one of these shelters and keep up quite a high degree of temperature with their own animal heat for hours, and even days, if the storm should be prolonged, and they are safe from the cold, though the air they breathe may not be of the best.

The Kenaitze are in disposition much more taciturn than their Innuit neighbors and are more dignified in demeanor; but they are ardent hunters, spending most of their time and energy in the chase on land, where the fur-bearing animals peculiar to the country are numerous, varied, and valuable, and often make long journeys into the interior, up and through mountain defiles, and even over summits and glaciers, erecting at every convenient camping-ground the temporary shelters above referred to. At localities where tribes or families meet for traffic or hunting they build up somewhat larger structures, consisting of two open sheds, with sloping roofs facing each other, allowing the inmates to warm themselves by one and the same fire. These people along the rivers and the northern portion of the inlet build birch-bark canoes, but when they get down to the sea-board or to the Innuit settlements of the lower peninsula they buy bidarkas or skin-boats for the purpose of fishing or navigating in salt water. Wooden canoes or dug-outs are not known west of the mouth of the Copper river.

The Kenaitze are expert fishermen, and certainly enjoy an abundance of piscatorial food, salmon of fine size and quality running up their rivers, and trout crowd the hundreds of lakes in their country, where they are found all through the winter and caught through the ice. The fishermen descend to tide-water only when king-salmon, or "chavitcha", come up from the sea in dense masses, or when schools of white whales or grampus follow up the "enlachan", or candle-fish, until they are left high and dry by the receding tide and fall easy victims to the natives. The variety of native mammals is very great. Bears both brown and black—the former of great size and ferocity, frequently from 10 to 12 feet in length, strongly suggestive of the grizzly—are killed in large numbers by the hunters every year. The deer found here is apparently a larger cousin of the reindeer, the woodland caribou. Moose, single and in family groups, can be found feeding through the low brush-wood and alder swamps, and mountain sheep inhabit the higher mountains, feeding upon the nutritious grasses and moss found in the crevices of mountain tops and rocky ledges. The fleece of this sheep (or goat?) is surprisingly long and coarse, their skins making a favorite bedding of the natives. These natives trap the beaver on streams and lakes, the land-otter, not only in the interior, but on the sea-shore, and kill the porcupine, the whistling marmot, wolves, black and gray, the lynx, the wolverine, the marten, mink, musk-rat, and a small white weasel, called here "ermine" by courtesy. Of wild fowl they have the grouse (both the white ptarmigan and the ruffed grouse), wild geese and ducks in millions during the breeding season, and the blue sand-hill crane and white swan in flocks.

From the Kenai settlements on the eastern shore of the inlet and the Kustatan village opposite, southward, the men are also sea-otter hunters, going down to Anchorage point and the Barren islands in parties, or to the reefs of Chermaboura and cape Douglas. The Kenaitze population proper is all located north of a line drawn from Anchorage point to the Ilyamna portage of the west coast of the inlet, south of the deep indentation of the Kenai peninsula called Chingachik or Kuechekmak gulf. This country is settled by Innuits, who have peopled the east coast of the peninsula, and from there eastward along the mainland nearly to the Copper river. Two of the trading-stations in the Kenai district are located among these Innuits at English bay and Seldovia. Three more stations, consisting each of two rival stores, are located at Kenai (Rédoute Saint Nicholas), on the river Kimik, and the village of Toyonok, or West Foreland.

The central point of all this region is Kenai, once the site of the earliest permanent settlement on the inlet, the remnants of which can still be seen. A Russian missionary is located here, and a new church is nearly completed.

At the time of the transfer of the territory Kenai was still a fortified place, with a high stockade and octagonal bastions at the salient points. Both stockade and bastions, with their primitive armament of 1½-pound falconets, have disappeared since then, but a number of new buildings have sprung up, and a thrifty colony of creoles has taken to the cultivation of potatoes and turnips on a larger scale than had ever been attempted before. Perhaps ten or twelve acres are planted here now, and several of the families keep cattle. Some of the choicest salmon of the territory is salted here, and is barreled and shipped to San Francisco. The hunting-grouunds in the immediate vicinity do not yield their former abundance of valuable furs, but the presence of the missionary establishment causes a concentration of natives from all parts of the inlet at least once a year and brings considerable trade to this old station. It was on the river Kaknu, or Kenai, that the Russian mining engineer Doroshin reported the existence of surface gold in paying quantities. After laboring with a numerous party in the mountains for two seasons, at great expence to the Russian-American Company, he returned with a few ounces of the precious metal, but he could present no inducement to the corporation to proceed any further in this enterprise. Since that time American prospectors have passed years in this region following up the Russian's tracks, but not one of them has thus far found gold enough to warrant him to work the find. In former years Kenai was also the site of a large brick-yard, the only establishment of the kind in the colony, from which all stations and settlements were supplied with the material for the old-fashioned Russian ovens or heaters.

About 30 miles down the coast from Kenai there is another settlement deserving at least a passing notice. A number of "colonial citizens", or superannuated employés of the old Russian company, were ordered to settle some fifty or sixty years ago at Ninilchik, and their descendants live there still. Each family has quite a large garden patch of turnips and potatoes, yielding enough to allow the owners to dispose of a large surplus to traders and fishermen. They have quite a herd of cattle, and the women actually make butter; but they are not sufficiently advanced in farming lore to construct or use a churn, and the butter is made in a very laborious manner by shaking the cream in bottles. They also raise pigs and keep poultry, but on account of the hogs running on the sea-shore digging clams and feeding upon kelp, and the chickens scratching among fish-bones and other offal, both their poultry and their pork are fishy to such an extent as to be made unpalatable. The young men of the settlement go out to hunt the sea-otter at Anchor point, or even lower down the coast.

The whole region about Cook's inlet is wooded, the forest being here and there interspersed with marshy tundras; but everywhere along the coast the timber is small and stunted, being of larger dimensions only in the interior.

In the vicinity of Anchor point, on Kuchekmak gulf, and on Graham's or English harbor, extensive coal-veins appear along the bluffs and come to the surface. The Russian-American Company jointly with a San Francisco firm worked here for years to develop the mines and obtain a product good enough for the use of steamers and engines, but after sinking a large capital the enterprise was abandoned before the transfer of the territory took place. A few remnants of the extensive buildings erected in connection with these mining operations still remain on the north shore of English bay.

The easternmost section of this division comprises the coast bordering upon the gulf of Chugach, or Prince William sound, and from there to Mount Saint Elias this is essentially an alpine region. The whole coast between cape Saint Elizabeth in the west and the mouth of Copper river in the east is deeply indented with coves and fiords, and towering peaks rise abruptly from the sea. Nearly every valley and ravine has its glacier, some of the latter being among the most extensive in the world. In Port Valdez, at the northern extremity of the sound, a glacier exists with a face 15 miles in length at the sea-shore, while its downward track can be traced almost to the summit of the alps. Huge icebergs drop off its face with a thundering noise almost continually and drift out to sea, and the whole extensive bay is covered with small fragments, making it inaccessible to even boat navigation, and consequently a safe retreat for seals, which sport here in thousands. Port Fidalgo in the east and Port Wells in the west also have tremendous glaciers, and another glacial formation forms the portage route between Chugach bay and Cook's inlet. Though covered with a dense forest to a height of 1,000 feet from the sea-level, these mountains are comparatively poor in animal life, and support in small settlements only a very limited population scattered along the coast and islands. The timber is nearly all spruce, some of it of extraordinary size, but no practical use has been made of this material since Baranof established a ship-yard in Resurrection bay, on the Kenai peninsula, and with the aid of English shipwrights constructed a few small vessels. One of these crafts was a three-master, and boasted the title of frigate, though it measured only 100 tons.

Traces of the Russian woodman's ax are still plainly visible along the western coast of the sound and on Montague island, and the huge logs still lie where they were felled in anticipation of an industry that was not developed.

The principal fur-bearing animals of this section are the black and the brown bear, otter, marten, and mink, but on the eastern side of Nuchek island there is quite an extensive sea-otter hunting-ground, which supports two large trading-stores on that island. Whales are plentiful in these waters, but the natives are not bold enough to attack them. Cod-fishing banks exist in a few localities, and all the rivers and streams have their annual run of salmon. In the early times of the Russian régime Nuchek, which was then called Rédoute Saint Constantine, was

quite an important trading center, being visited by Thlinket tribes from the coast to the eastward as far as Bering bay, and also by the Copper River Indians of the Tinnel family. This traffic, to a certain extent, still exists, but not in the old dimensions. There is every reason to believe that the Copper River people have much decreased in numbers, and that they find other outlets for their trade to the northward on the Yukon or the Temanah.

Under the protection of the Russians the Eskinuo race here occupied the coast as far eastward as Kaiak island and Comptroller bay, but in late years the Thlinket have gradually advanced westward, first mixing with the Eskimo and then absorbing and superseding them, until at the present day they are established in predominant numbers even west of the mouth of the Copper river.

The number of sea-otters sold at the Nuchek stores every year does not exceed 150, and are all killed between the islands of Nushegak and Kaiak. The whole Eskimo population of this secluded district is only about 500, and, as they are poor, they will most probably remain in this seclusion, which is broken but once or twice a year by the arrival of the trading-schooner. They have food in plenty such as it is, consisting of seal-blubber, salmon, the meat of the marmot, porcupine, and bear, varied occasionally by the welcome addition of mountain sheep, an animal that is found over all this alpine region, and is as persistently and skillfully hunted by the natives as is the chamois in Switzerland and the Tyrol. The meat of this mountain sheep, or goat, is in every way equal to the finest tame mutton, but by the time one of the native hunters brings a carcass down from the mountains to the sea-coast or the trading-store the meat is sadly bruised and lacerated, and presents rather an uninviting appearance. Foxes, of course, are plentiful here, as everywhere in Alaska, in two or three varieties, some very fine specimens of silver-gray being brought down to the coast by the Copper River Indians. No mineral deposits have been discovered in these mountains, with the exception of pure native copper, specimens of which have been secured from Copper river ever since the Russians first made their appearance there, but repeated attempts by Russians, and later by Americans, to locate the source from whence these specimens came have always resulted in failure. An American prospector who lived with those Indians for two years reports that he failed to discover copper or gold in paying quantities anywhere in that region, but his individual opinion is not sufficient to deny the existence of copper deposits, of which so many specimens have been procured; and the ultimate location of these deposits is only a question of time and energy.

Of the features of the coast between Copper river and Mount Saint Elias but little is known, but it is evidently a narrow table-land between the high mountains and the sea, well timbered, and traversed by numerous shallow streams that take their origin in the glaciers and eternal snows. The natives describe it as an excellent hunting-ground. The island of Kaiak is undoubtedly the point where Bering first approached the North American continent, and upon the southern point of which he bestowed the name of Cape Saint Elias. It is not permanently inhabited, but hunting parties from the mainland sometimes remain here for many months at a time.

The Eskimo of this section partake of the same characteristics with the people of Kadiak and the peninsula.

Timber exists here in the greatest abundance. The dwellings of the people are generally under ground, according to Inuit custom, but where the Thlinket or Kolosh race has mixed with them and gained supremacy the mode of architecture changed at once to substantial log structures entirely above ground, generally with a plank platform running along the entire front, on which the inmates assemble in fine weather, and sit upon their haunches, wrapped in greasy blankets, smoking and staring stupidly into vacuity. At Nuchek there is a Russian chapel, but it is eight or nine years since a priest has made his appearance there. A creole reads prayers every Sunday in the chapel, which is kept in excellent repair with the aid of donations from all the surrounding villages. It is touching to observe the constancy and faith of these poor people, who have gathered at this central point from a circuit of one hundred miles every spring for the last nine years in the expectation of seeing a priest come at last to give them his blessing and to solemnize the marriages that have been contracted during this long interval. Baptism can be performed by the church reader under the rules of the Russian church.

I append a tabulated list of the settlements and the population of the entire peninsula division, as follows:

KADIAK DIVISION.

Settlements.	Location.	Total.	White.	Creole.	Eskimo.	Athabascan.	Thlinket.
Total.....		4,852	34	917	2,211	864	326
Mitrofania	Alaska peninsula.....	22	.....	22	.....	.....	.....
Kalniak	Alaska peninsula.....	30	.....	1	29	.....	.....
Sutkhoon.....	Alaska peninsula.....	25	.....	.....	25	.....	.....
Kuyuk-k	Alaska peninsula	18	.....	.....	18	.....	.....
Katmai	Alaska peninsula.....	218	.....	37	181	.....	.....
Kukak	Alaska peninsula	37	.....	.....	37	.....	.....
Ashivak	Cape Douglas	46	.....	6	40	.....	.....
Saint Paul.....	Kadiak Island	288	20	253	15	.....	.....
L'euva	Wood Island.....	157	2	56	99	.....	.....
Velovel	Spruce Island.....	78	.....	78	.....	.....	.....
Ozunkie.....	Kadiak Island	45	.....	45	.....	.....	.....

KADIAK DIVISION—Continued.

Settlements.	Location.	Total.	White.	Creole.	Eskimo.	Athabas-kan.	Thlinket.
Afognak (two villages).....	Afognak island.....	339	.....	195	144	.....	.....
Ooganok (two villages).....	Kadiak island.....	73	.....	.....	73	.....	.....
Ooiaik.....	Kadiak island.....	76	.....	.....	76	.....	.....
Karluk.....	Kadiak island.....	302	1	24	277	.....	.....
Akbiok.....	Kadiak island.....	114	.....	.....	114	.....	.....
Ayakhtalik.....	Kadiak Island.....	101	.....	4	97	.....	.....
Kaguuak.....	Kadiak island.....	109	1	6	102	.....	.....
Three Saints bay.....	Kadiak island.....	7	.....	4	3	.....	.....
Old harbor.....	Kadiak island.....	160	.....	5	155	.....	.....
O-lova.....	Kadiak island.....	147	.....	8	139	.....	.....
C'liniak village.....	Kadiak island.....	24	.....	.....	24	.....	.....
Kilinda.....	Kadiak island.....	36	.....	.....	36	.....	.....
Alexandrovsk.....	Kensi peninsula	88	1	12	75	.....	.....
Vahk.....	Eastern coast Kenai peninsula.....	32	.....	.....	32	.....	.....
Seldovia and Ostrovki.....	Kenai peninsula	74	.....	38	36	.....	.....
L-ila.....	Kenai peninsula	29	.....	.....	29	.....	.....
Nimlichik.....	Kenai peninsula	53	.....	53	.....	.....	.....
K-ssilof.....	Kenai peninsula	31	.....	.....	31	.....	.....
C'ikituk and Chernilla	Kernai peninsula	50	.....	10	40	.....	.....
S' hakh.....	Kenai peninsula	44	.....	.....	44	.....	.....
K'nal Rédente.....	Kenai peninsula	44	2	42	.....	.....	.....
T'nikiisk and Nikishka.....	Kenai peninsula	57	.....	.....	57	.....	.....
Kuitnu.....	Kenai peninsula	17	.....	.....	17	.....	.....
Kuukatunk.....	Klinik river, Cook's inlet.....	57	1	1	.....	55	.....
Zelmaf.....	Klinik river, Cook's inlet.....	16	.....	.....	16	.....	.....
Nitakh.....	Klinik river, Cook's inlet.....	15	.....	.....	15	.....	.....
Klinik.....	Klinik river, Cook's inlet.....	46	.....	.....	46	.....	.....
Susheetno (1st village).....	Cook's Inlet	44	.....	.....	44	.....	.....
Susheetno (2d village).....	Cook's Inlet	46	.....	.....	46	.....	.....
Toyonok station and village.....	Cook's Inlet	117	2	6	.....	109	.....
Kustatan.....	Cook's Inlet	65	.....	.....	65	.....	.....
Chenega.....	Prince William sound.....	80	.....	.....	80	.....	.....
K. uikhlnuk.....	Prince William sound.....	54	.....	.....	54	.....	.....
Taalkhlek.....	Prince William sound.....	73	.....	.....	73	.....	.....
Nuebek.....	Prince William sound.....	74	3	11	60	.....	.....
I'chuk and Alaganu.....	Mouth of Copper river.....	117	.....	.....	117	.....	.....
Cape Marin.....	Mouth of Copper river.....	7	1	.....	.....	6	.....
Atnah villages.....	Copper river.....	250	.....	.....	.....	250	.....
Chilkhat villages.....	Comptroller bay.....	170	.....	.....	.....	170	.....
Y-kta ; villages	Foot of Mount Saint Elias range.....	150	.....	.....	.....	150	.....

The superficial area of the Kadiak district is approximately 70,884 square miles; the inhabitants, numbering 4,352, would give us a ratio of 1 inhabitant to $16\frac{1}{2}$ square miles. The ratio of civilized population (white and creole) is 1 to $74\frac{1}{2}$ square miles.

THE SOUTHEASTERN DIVISION.

The narrow strip of coast-line from Mount Saint Elias to Portland canal, a strip that was patched upon the solid body of the Russian possessions on this continent through the ambition of Baranof, differs in all its characteristics from the bulk of Alaska, partaking essentially of those of the coast of British Columbia and the islands adjoining. Though Baranof, or rather the company which he represented, at the beginning of the present century was powerful enough not only to establish but to maintain possession of the narrow belt between the mountains and the sea, he was never able to extend the Russian possessions into the interior where the outposts of the Hudson Bay Company were already located, and as the successor of the Russians the people of the United States have shut off the British possessions from the sea-coast for a distance of nearly 500 miles.

This whole division is densely wooded and exceedingly mountainous in its formation; the coast is deeply indented with bays and fiords, and for two-thirds of its length is sheltered by the numerous islands of the Alexander archipelago. The forests, impinging as they do upon the sea-coast everywhere, are easily accessible, and will be of the greatest value in the future either as fuel or as building material. The Alaska spruce is the prevailing forest tree, but in the southern section of the division the yellow cedar, the most valuable of all the northern trees, exists in considerable quantities. The wood of this tree has always been an article of export to a limited extent, and it is purchased by the cabinet-makers of the Alaska coast at the present day; but the extent to which this industry might be developed is not yet known. Large bodies of this timber are found farther south in the adjoining British possessions. Coal has been discovered on many of the islands and on the mainland, but no practical use has thus far been made of the discoveries. An extensive vein of bronze-copper was opened

on Prince of Wales island by a British Columbian firm, but for some reason unknown the enterprise languishes. Discoveries of gold-bearing quartz have been made on Baranof island, in the immediate vicinity of Sitka, only since the transfer of the territory, and for a time quite an excitement was created; but now these ledges are scarcely worked at all, being simply held by the owners for further developments, or until some process can be discovered for working with profit the peculiar grade of ore existing there. In the meantime surface gold was discovered on the peninsula between the inlets of Tukoo and Chilkhat. The mining population of Sitka, and, to a great extent, that of the Wrangell and the Cassiar country, was drawn away to the new discoveries, where they are now engaged with apparent success. Veins of quartz have also been located in the same locality; and with the undaunted prospector throughout all this region, in a few years more the mining resources of southeastern Alaska will be fully known.

Next in importance to the mining industry stands the fur-trade, once the sole foundation of the country's prosperity. From the silver and the black fox, the marten, and the land-otter the most valuable furs are secured by the natives, together with skins of the black and the brown bear, a limited quantity of beaver, and a few sea-otter. Owing to excessive competition the prices paid for these furs are abnormally high, and the profits from the trade must be correspondingly small.

Salmon, halibut, and herring crowd all the waters of the sea-coast as well as those of the interior channels of the archipelago, and two or three canning and salting establishments have been in operation for some years. The oil procured from herring and dog-fish and shark finds a ready market. A few small saw-mills furnish rough lumber for local consumption, and a few small craft, including one steamer of 80 tons burthen, ply over the sheltered inland waters and as far north as Bering bay on the open coast. The natives on many of the islands make quite a profitable business of killing hair-seals for their hides and the oil rendered from the blubber.

The climate of this division, especially from Cross sound to the southern boundary, is very peculiar. The temperature is not as low as might be expected in this latitude, thermometrical observations extending over nearly fifty years presenting a minimum of only 4° below zero, while the maximum reached $+87^{\circ}$; this, however, occurred but once during the period mentioned. The mean annual temperature derived from all these observations is $43^{\circ} 28'$.

The rainfall statistics, extending over the same period, show a mean annual precipitation of over 80 inches, and several of the annual records are above 90, while one reaches 103. The number of days on which rain fell during the periods referred to averaged 165 per annum, and of snow-fall 33; but during several years the rainy days numbered as high as 250 and even 264 a year. The highest number of days on which snow fell here was 47. This enormous precipitation makes it plain that, in spite of the comparatively high temperature, the climate of southeastern Alaska cannot be called an agreeable one, or one that would hold out a prospect of success to agricultural emigrants. Vegetable gardens, however, have been successfully cultivated all over this district, wherever white men settled who were willing to bestow the necessary labor upon this way of ameliorating their daily fare. Potatoes were found among the natives of this region by the very first English and American visitors, especially among the Hyda tribes, and at present they are freely offered for sale by the natives wherever white people congregate for mining or trading. Owing to the rugged and mountainous formation of the country, and the thick undergrowth making the forest almost impenetrable, the keeping of cattle is surrounded with great difficulties, and hay is not easily cured during the few sunny days of which this section can boast.

Nearly all the natives inhabiting the southeastern division are of one kin—the Thlinket tribe, or "Kolosh" as they were called by the Russians. Only at the southern portion are found a few settlements of the Hyda tribe from British Columbia. When the Russians first came to the Alexander archipelago the natives offered a stubborn resistance to their permanent establishment. The first block-house or station erected by Baranof, at old Sitka, was taken by surprise and all the inmates put to death by the combined Sitka and Stockin tribes, and about the same time the Thlinket of Bering bay or Yakutat fell upon the settlement established there, killing the inhabitants and carrying off a few women into captivity. About this time, also, two large sea-otter hunting parties, consisting of Inuits, under the leadership of Russians, were surprised and almost annihilated by the Kolosh.

Undaunted by these disasters Baranof drove the native warriors from their fortified position on the site of the present town of Sitka and established himself there, making that point the headquarters of the great Russian Fur Company. From that time forth the Thlinket only indulged in an occasional robbery or murder of isolated hunters, but no cordial intercourse was ever established between them and their conquerors. The business between them was carried on in a cautious manner, highly suggestive of a state of siege. The Russian priests made very little impression upon the warlike pagans, who only occasionally for the consideration of a present consented to submit to the ceremony of baptism.

As late as 1855 the Sitka Indians attacked the Russian fortifications, an action of several days resulting, during which quite a number were killed and wounded on both sides, but the difficulty was finally settled by treaty.

At that time the town of Sitka was thoroughly fortified with numerous bastions and batteries mounting between sixty and eighty cannon of various calibers. The most important of the batteries was located about the mansion of the chief manager of the Russian-American Company, which was perched upon a steep, rocky elevation,

and is still known as "the castle". Here seventeen cannon (12- and 24-pounders) were planted and kept constantly loaded. Every male inhabitant of the Russian settlement of Sitka had his station assigned to him in case of attack by the natives, and all employés were drilled occasionally in the manual of arms, etc. The military garrison, consisting of 180 soldiers of the Siberian battalion, mounted guard regularly, with sentries stationed at the various gates in the stockade.

For nine years after the transfer of the Russian possessions to the United States a military post was maintained here, consisting at first of nearly 250 men, but the number was gradually diminished, and the last troops were withdrawn in 1876. A few difficulties arose during this time between the troops and the Indians of Sitka and one or two of the more distant tribes, but they were generally adjusted by arbitration and a mere display of readiness to fight. A United States man-of-war now (1880) does police duty at Sitka, patrolling occasionally the interior channels of the Alexander archipelago. It is safe to predict that the mere presence of some armed force in this section will always be sufficient to keep in check the naturally warlike and arrogant Thlinket.

Since the transfer of the territory the town of Sitka has continued to be considered as the most important point in Alaska, and whatever display there has been of military or civil power on the part of the United States was made here. The collector of customs for the district of Alaska resides at Sitka, and is unable to communicate with his deputies in the west except by way of San Francisco.

For thirty or forty years previous to the acquisition of Alaska by the United States the Sitka settlement contained a number of schools and churches—the latter comprising the cathedral of the diocese, two smaller Russian chapels, and a Lutheran church for the use of Germans, Swedes, and Finns in the employ of the Russian company. Of the schools one was for the sons of the higher officers of the company, under the ambitious name of "Colonial Academy", one a boarding-school for girls of the same class, and two other schools for the children and orphans of the lower grades of employés and laborers.

For some time Sitka was also the site of a theological seminary of the Russian church. All these establishments, with the exception of the cathedral, have been discontinued, and at present the only efforts in the field of education are made by missionaries and teachers sent out by the Presbyterian board of missions, with some pecuniary assistance of the naval authorities at Sitka. Mission schools have been located at Chilcoot, Hoonyah, Wrangell, and at Shakan, on Prince of Wales island. At Wrangell there is also an industrial home for native girls, maintained by the Presbyterians, and the chapel and the parsonage of the Roman Catholic church. Concerning these missionary establishments, the Rev. Sheldon Jackson, D.D., has furnished the following statistics:

The first school at Wrangell was established in 1877, and placed in charge of a lady teacher. In 1878 a home for girls was added to the establishment; and in the season of 1880 and 1881 this latter establishment contained 30 inmates, while the school had an average attendance of 60.

At Sitka a school was opened in April, 1878, and kept open with varying success until in April, 1880. An attendance of 130 (grown people and children) was reported.

One of the naval officers stationed at Sitka introduced upon his own responsibility a system of compulsory education, appointing regular truant officers; each child was labeled, and if found on the streets during school-hours was arrested, and the head of the household to which he or she belonged was fined or imprisoned. This extraordinary and arbitrary measure worked so well that the "average attendance" was suddenly forced up to between 230 and 250—one day reaching 271—a result highly gratifying to the Presbyterian teachers, whatever objections the public at large may have to this *modus operandi* on constitutional grounds. The school above mentioned was for the Indians alone. For the benefit of the creole children a school was established in 1879, with the assistance of the naval authorities, who furnished a teacher and interpreter in the person of an educated creole lady, who was rated as an "able seaman". This school had an average attendance of from 45 to 55 children, who were instructed in the English language and primary branches.

In the summer of 1880 a Christian Indian woman of the Tongas tribe was sent to open a school among the Chilkats at the head of Lynn channel, and here, later, buildings were erected at that point by the Presbyterian board of missions, and a competent teacher installed, who reports an average attendance of 75 pupils.

A school was also established among the Hoonyah tribe on Cross sound; the teacher reports 70 pupils.

At the southern end of Prince of Wales island, on Cordova bay, a chief presented a house to the Presbyterian mission and a school was opened, with an average attendance of 80 pupils.

At Shakan, on the north end of Prince of Wales island, a small school has been opened and placed in charge of a native teacher and his wife, both former pupils of the Wrangell school.

We append a tabulated list of the settlements and population of the southeastern division, as follows:

SOUTHEASTERN DIVISION.

Settlements.	Location.	Total.	White.	Creole.	Thlinket.	Hyda.
Grand total.....		7,748	293	230	6,437	788
NATIVES.						
<i>Chilkat tribe.</i>						
Vondestuk	Chilkat river and bay				171	
Kotkwutln	Chilkat river and bay				125	
Kinckjnan	Chilkat river and bay				565	
Chilcoot	Chilcoot river				127	
<i>Hoonyah tribe.</i>						
Kundekan	Chechagof island				800	
Kunglungue	Chilchagof island				108	

SOUTHEASTERN DIVISION—Continued.

Settlements.	Locations.	Total.	White.	Creole.	Thlinket.	Hyda.
<i>Kheetnahee tribe.</i>						
Angoon	Admiralty island, Hood's bay	660			420	
Sentskou	Admiralty island, Hood's bay				240	
<i>Kekk tribe.</i>						
Klukwan	Kuprianoof island				261	
Village	Kuprianoof island				82	
Village	Koo island	568			100	
Village	Port Houghton				50	
Village	Seymour's channel				75	
<i>Auk tribe.</i>						
Village	Stephens passage	640			290	
Village	Admiralty island				300	
Village	Douglas Island				50	
<i>Takoo tribe.</i>						
Tokeatl's village	Takoo river and inlet				36	
Chitklina's village	Takoo river and inlet	269			113	
Katiany's village	Takoo river and inlet				106	
Fotsbon's village	Takoo river and inlet				24	
<i>Stakhin tribe.</i>						
Shustak's village	Etholin island				33	
Kash's village	Etholin island				49	
Shakes' village	Etholin island				38	
Towayat's village	Etholin island	317			82	
Kohllene's village	Stakhin river				28	
I'manhan'a village	Stakhin river				31	
Kadishan'a village	Stakhin river				27	
Shallany's village	Stakhin river				24	
<i>Prince of Wales Island tribe.</i>						
Kouyon	Prince of Wales island, west coast				60	
Ilanega	Prince of Wales island, west coast	587			500	
Klawak	Prince of Wales island, west coast				27	
<i>Tongas tribe.</i>						
Village	Island mouth Po.-land canal	273			173	
Cape Fox	Prince of Wales island				100	
<i>Sitka tribe.</i>						
Sitka, Indian village	Baranof Island				540	
Silver Bay					39	
Hott Springs		721			26	
Indian River					43	
Old Sitka					73	
<i>Fakutat tribe.</i>						
Scattered villages between cape Spencer and Bering bay	Coast of mainland	500			200	
Yakutat	Bering bay				300	
<i>Hyda tribe.</i>						
Kassan and Skowl	Prince of Wales Island				173	
Klinquan	Prince of Wales Island				125	
Koianglas	Prince of Wales Island	788			62	
Ilowakan	Prince of Wales Island				287	
Shakan	Prince of Wales Island				141	
Total native		7,223			6,437	728
<i>WHITES AND CROOLEES.</i>						
Wrangell	Etholin island	106	105	1		
Shack	Stephens passage	10	10			
Sounds	Holikhan bay	10	10			
Shakan	Prince of Wales island	8	5	3		
Old Sitka	Baranof Island	6	6			
Sitka	Baranof Island	376	157	219		
Kassan	Prince of Wales Island	7		7		
Total white and creole		523	293	230		

The superficial area of this island division is, as nearly as it can be computed from the limited data at my command, about 28,980 square miles. This would give a density of population of 1 inhabitant to nearly 4 square miles. The ratio of civilized (white and creole) population was, in 1880, 1 to 55½ square miles. This element is now probably three times as numerous, or 1 to 19 square miles. The Thlinket and Hyda, however, are very susceptible of civilization, and are rapidly advancing in their social statns, thanks to the efforts of missionaries and the contact with Caucasian miners and traders.

RECAPITULATION OF THE POPULATION OF ALASKA.

Divisions.	Total.	White.	Creole.	Eskimo.	Aleut.	Athabas-kan.	Thlinket.	Hyda.
Total	33,426	430	1,756	17,617	2,145	3,927	6,763	788
Arctic	3,094	-----	-----	3,094	-----	-----	-----	-----
Yukon	6,870	18	19	4,276	-----	2,557	-----	-----
Knskokvim	8,911	3	111	8,036	255	506	-----	-----
Aleutian	2,451	82	479	-----	1,890	-----	-----	-----
Kadiak	4,352	34	917	2,211	-----	864	326	-----
Southeastern	7,748	293	230	-----	-----	-----	6,437	788

The earliest actual count of any Alaskan people now on record was made by Delarof (an agent of the Shelikhof Company) in the year 1792. This count comprised all the villages on Kadiak island and the settlement of Yukatmak (Katmai), on the Aliaska peninsula. The number then given was 6,510 of both sexes, as against Shelikhof's estimate of 50,000, made only six years before that date. Four years later, in 1796, Baranof counted 6,200 inhabitants on Kadiak island and the opposite coast of Aliaska peninsula.

On the Aleutian islands Panof, a trader, claimed to have counted 1,900 inhabitants as early as the year 1781, but this was only a verbal statement transmitted by others. In 1792 Captain Saryehef, of the Billings exploring expedition, who had been instructed to enumerate the natives, reported the population of the Aleutian islands as 2,500 of both sexes, but the result of an actual count made by order of the imperial chamberlain, Rezanof, resulted in the number of 1,942, approximating closely the estimate of Panof, made over twenty years before.

At the time of Baranof's retirement from the management of the Russian colonies in America, his temporary successor, Captain Hagemeyer, of the Russian navy, ordered an enumeration of the natives. This count included, of course, only those tribes over whom the Russian-American Company had absolute control. Of this partial census we have two returns, differing slightly in the totals. One was first published in the report of an imperial inspector Kostlivtzeff, who dated it 1818, which reads as follows:

NATIVE POPULATION OF RUSSIAN COLONIES IN AMERICA IN 1818.

Districts.	Total.	Males.	Females.
Kadiak	3,430	{ 1,484 142	1,769 35
Aliaska peninsula	869	402	467
Kensl (Cook's inlet)	1,471	723	748
Chugach (Prince William sound)	477	{ 172 51	188 66
Oughalente (Prince William sound)	-----	-----	-----
Mednovtze (Copper river)	567	294	273
Fox Islands (Aleutian)	469	{ 403 188	559 191
Pribilof Islands (Aleutian)	-----	-----	-----
Aleutian	-----	42	26
Total	8,283	3,961	4,322
Russians	354	344	10
Creoles	256	147	109
Aggregate	8,893	4,452	4,441

No estimate of the Thlinket or Kolosh accompanied this document.

The other return of the same enumeration was published by Tikhménief in his *Historical Review*, and dated 1819. It is as follows:

NATIVE POPULATION OF RUSSIAN AMERICA IN 1819.

Districts.	Total.	Male.	Female.
Kadiak district	3,252	1,483	1,769
Aliaska peninsula	869	402	467
Chugach (Prince William sound)	477	{ 172 51	188 66
Oughalente (Prince William sound)	-----	-----	-----
Fox Islands (Aleutian)	-----	464	559
Pribilof Islands (Aleutian)	1,748	{ 185 285	191 61
Aleutian laborers at Sitka	-----	-----	-----
Kensl (Cook's inlet)	1,471	723	748
Mednovtze (Copper river)	567	294	273
Total	8,284	4,062	4,322
Russians	391	-----	-----
Creoles	244	-----	-----
Thlinket or Kolosh (estimate)	5,000	-----	-----
Aggregate	14,019	-----	-----

The discrepancies between these two returns are small, and are easily accounted for by the difference in date.

Three years later, in 1822, another return placed the native population under control of the company at 8,286.

Next in chronological order comes a population return of the Russian colonies in America, forwarded by chief manager Baron Wrangell, under date of January 1, 1825, as follows:

Islands.	Total.	Males.	Females.
Total	8,481	4,102	4,379
Kadiak island.....	2,810	1,351	1,468
Aliaska, coast opposite.....	100	99	91
Ookamok island.....	88	51	87
Chngach, Prince William sound.....	1,563	782	781
Kenai, Cook's inlet.....	1,209	636	663
Nushegak, Bristol bay.....	671	306	365
Ilinliuk, Oonalashka island.....	333	152	181
Chernovsky, Oonalashka island.....	43	21	22
Borka, Oonalashka island.....	27	11	16
Onmnak island.....	137	62	75
Oonsalga island.....	11	8	8
Akntan island.....	36	18	18
Akoon island.....	139	59	80
Avatanok island.....	43	22	21
Tigalda island.....	52	24	28
Oogamok island.....	49	19	80
Aliaska, adjoining coast.....	207	118	89
Oonimak island.....	99	45	54
Sannakh island.....	101	43	58
Ounga island.....	50	25	25
Atkha island.....	130	63	67
Chugal island.....	62	29	33
Adakh island.....	193	104	89
Amchitka island.....	42	14	28
Attoo Island.....	97	45	52

This count also includes only the natives under control of the company, ignoring the Thlinket, and must be ascribed to Veniaminof during the first year of his sojourn on the Aleutian islands. According to this statement the aggregate of Aleutian tribes was then 1,850 of both sexes, while that of Kadiak and the adjoining coast of the Aliaska peninsula was 3,097, figures which do not agree with a comparative statement of population of these two sections published in 1830, and also ascribed to Veniaminof, as follows:

Years.	Kadiak and Aliaska.	Years.	Aleutian Islands.
1792.....	6,510	1781.....	1,900
1806.....	8,944	1806.....	1,898
1817.....	4,196	1813.....	1,508
1821.....	3,649	1825.....	1,478
1825	3,896	1830.....	1,460

From this it will be seen that the aggregate population of the two districts in 1825 was nearly the same as that given in the preceding table of Wrangell, though the distribution differs somewhat.

In the year 1831 the same priest, Veniaminof, made a careful count of the Aleutian people, which may be considered as authentic. The result of his investigations was a tabular statement, arranged by villages and islands, giving also the number of houses and canoes in each settlement. I cannot do better than republish it in full:

CENSUS OF OONALASHKA DISTRICT IN 1831.

Islands.	Villages.	INHABITANTS.			Houses.	Canoes.
		Male.	Female.	Total.		
Oonalashka	Ilinlink.....	90	108	198	27	15
Do.....	Natnikinsk.....	6	9	15	2	2
Do.....	Pestriakov.....	18	21	39	5	4
Do.....	Vesselovaky.....	7	8	15	3	3
Do.....	Makushin.....	15	20	35	6	5
Do.....	Koshigin.....	18	23	41	8	9
Do.....	Chernovsky	20	24	44	4	10
Do.....	Imagnak	15	17	32	4	2
Do.....	Kalekhta.....	6	8	14	2	2
Do.....	Bobrovskaja.....	21	20	41	4	6
Total Oonalashka (ten villages).....		216	256	472	65	58

CENSUS OF OONALASHKA DISTRICT IN 1831—Continued.

Islands.	Villages.	INHABITANTS.			Houses.	Canoes.
		Male.	Female.	Total.		
Oumnak	Recheschnaia..... Tulik.....	38	45	83	13	12
Do.....		11	15	26	3	6
Total Oumnak (two villages).....		49	60	109	16	18
Akoon.....	Arteinsia..... Recheschnaia..... Srednaia.....	16	16	32	7	9
Do.....		19	18	37	5	8
Do.....		7	9	16	2	4
Total Akoon (three villages).....		42	43	85	14	21
Pribylof.....	Saint George and Saint Paul.....	88	94	182	.....	.....
Borka	Sidanak	17	27	44	6	7
Oonalga.....	Oonalga	10	13	23	3	4
Avatanok.....	Avatanok	24	25	49	5	9
Akutan.....	Akutan	0	7	13	2	1
Tigalda.....	Tigalda	38	59	97	6	14
Oomisak	Shishaldin	38	53	91	2	4
Ounga.....	Delarof	52	64	116	13	15
Total small Islands (nine villages).....		273	342	615	37	54
Aliaska peninsula	Morsevol..... Belkovsky..... Pavlovsk.....	16	29	45	7	6
Do.....		49	53	102	10	10
Do.....		28	31	59	8	9
Total Aliaska peninsula (three villages).....		93	113	206	25	31
Scattered at Sitka and elsewhere		10	18	28	.....	.....
Grand total of district.....		683	832	1,515	157	182

This table gives us the proportion of nearly ten inhabitants to each house, 8 inhabitants to every canoe, and 1 canoe to between 3 and 4 male inhabitants (about 1 canoe to every 2 adults). The excess of females over males was nearly 10 per cent.

In the year 1835 the same priest, then stationed at Sitka, made a close estimate of the Kolosh or Thlinket of southeastern Alaska, which seems remarkably accurate in its total, though some of the villages enumerated by Veniaminof are not known to us now. He divided the Thlinket into sixteen villages or clans, as follows:

ESTIMATE OF KOLOSH IN 1835.

1. Yakutat village.....	150
2. Ltuia or Avetzk.....	200
3. Icy strait (Cross sound).....	250
4. Chilkat (Lynn canal).....	200
5. Aknt (Auk).....	100
6. Sitkha.....	750
7. Takoo	150
8. Hootznoo	300
9. Kehk	200
10. Kuyutzk	150
11. Henu (Hunyah or Hanega?).....	300
12. Stakhin	1,500
13. Tongass.....	150
14. Kaigan (Hydan)	1,200
15. Chassin	150
16. Sanakhan	100
Total	5,850

In 1839 Veniaminof made another estimate, including the total population of the country now called Alaska. He wrote as follows:

The northwestern part of America, from Bering strait to the meridian of Mount Saint Elias, or 141° west of Greenwich, and all the islands situated along the coast of America farther to the eastward, and a portion of the mainland, to a distance of 50 versts from the sea-shore, down to longitude 130° and latitude 50° , belongs to Russia, and is bounded in the east by the British possessions. Our America

is peopled by a multitude of tribes and races, the number of which is, of course, unknown to us, but as far as the names of tribes in our part of America have been ascertained, they are as follows:

1. The Kolosh, inhabiting the islands and the narrow strip of the American continent at the extreme south-eastern limits of the Russian possessions, whose number is now about	5,000
2. The Oughalente, living near Mount Saint Elias, numbering not more than.....	150
3. The Mednovte, who live on Copper river, to the number of.....	300
4. The Kolehane, living far away in the interior of the continent, near our boundaries; their number is unknown.....	
5. The Chungach, living on the gulf of the same name, numbering now.....	471
6. The Kenaltze, living on the shores of the gulf of Kenai, numbering.....	1,628
7. The inhabitants of the southern shore of the Aliaska peninsula, numbering.....	1,600
8. The Aglegmuite, on the northern shore of Aliaska peninsula, numbering.....	402
9. The Kadiaks or Koniagi, living on the island of Kadiak, numbering.....	1,508
10. The Ounalashkans or Aleuts, inhabiting the Fox islands and a portion of the Aliaska peninsula, numbering.....	1,497
11. The Atkhans, or Atkha Alents, inhabiting the Andrean of islands, numbering.....	750
12. The Kuskokwims, living on the river Kuskokwim, which empties into Bering sea, numbering about	7,000
13. The Kvikhpaks, Kiatentze, Malegmuite, and other tribes inhabiting the shores of Bering sea and the rivers emptying into the same, and also the coast of the Northern ocean, whose number cannot be less than all those above mentioned together.	
To this native population of Russian America we must add Russians living in the various settlements, to the number of	706
Creoles—that is, the offspring of Russians from native American mothers—who form the foundation for a class of American citizens of Russia, numbering	1,295
<hr/>	
Consequently our total population in America may be given as follows:	
Known and counted	10,313
Known, but not counted	12,500
Estimated only	17,000
<hr/>	
Making a total of	39,813
<hr/>	

Though objection may be made to certain details of this estimate as incorrect, the total comes sufficiently near to our latest data to convince us that Veniaminof had then a better conception of the population of Russian America than the compilers of the official reports of the Russian-American Company exhibited during many succeeding years.

Next in chronological order we find an enumeration of the Thlinket and Hyda tribes of Alaska, made under the auspices of Sir James Douglas, of the Hudson Bay Company, in the year 1839, when the latter firm had obtained from the Russian-American Company a ten years' lease of the continental coast between Lynn canal and the southern boundary. This document was never printed, but has been preserved in the archives of the Hudson Bay Company and in Sir James Douglas' private papers. Its figures are somewhat in excess of Veniaminof's estimate, but approach more closely to our most recent enumeration. The names of tribes and clans, as given by Douglas, cannot all be identified now, but the whole table, circumstantial as it is in its classification of adults and children of both sexes and even of slaves, bears the imprint of authenticity. Subjoined I give it in full as copied from the manuscript journal:

CENSUS OF NATIVE TRIBES OF RUSSIAN AMERICA BETWEEN LATITUDE 59° AND 54° 40' N., EXCLUSIVE OF THE SITKA TRIBE ON BARANOF ISLAND, IN 1839.

Traders' names of tribes.	Native tribal names.	Locations.	Total.	ADULTS.		CHILDREN.		SLAVES.	
				Men.	Women.	Boys.	Girls.	Male.	Female.
				7,190	2,125	1,996	1,238	1,201	205	335
Total									
Chileat	Chilkhaat.....	Lynn canal	498	167	116	71	66	42	36
Cross sound	Hoonyah.....	Cross sound	782	258	234	108	88	40	54
Anko.....	Anko	North of Takoo river.....	203	72	61	35	31	2	2
Tako Samdan	Tako, Samdan, Sitka.....	Takoo river, Sitka river	493	127	110	71	66	59	60
Hloocheno	Hootznoo	Hood's bay	729	247	240	85	70	40	41
Hanega	Henega	Prince of Wales island	200	82	80	29	27	27	24
Kako	Kehk	Kehk archipelago	393	109	106	70	64	24	20
Stikeen	Stakhin	Stakhin river	118	31	24	30	27	2	4
Do	Liknahutly	Stakhin river	93	38	29	10	9	3	4
Do	Ta-ee-teeton	do	135	50	41	10	6	6	13
Do	Kvaskaguatee	do	234	97	87	36	32	2	—
Do	Kukata	do	390	83	117	60	46	32	32
Do	Naantagh	do	169	52	51	27	33	2	4
Do	Talguatee	do	99	31	21	21	18	4	4
Do	Kikasteo	do	172	61	60	20	19	4	8
Port Stuart	Ahiatl	Port Stuart	180	50	45	42	49	—	—
Tourgas	Kitahoonet	Clarence strait	315	85	90	60	65	6	9

CENSUS OF NATIVE TRIBES OF RUSSIAN AMERICA BETWEEN LATITUDE 59° AND 54° 40' N.—Continued.

Traders' names of tribes.	Native tribal namea.	Locations.	Total.	ADULTS.		CHILDREN.		SLAVES.	
				Men.	Women.	Boys.	Girls.	Malo.	Female.
Cape Fox	Lukhselee	Capo Fox	177	45	50	39	43	.....	.....
Kaigani	Yonahuo	Prince of Walea archipelago	234	68	70	44	52	.....	.....
	Clickass	do	417	98	105	102	112	.....	.....
	Quiahaneless	do	148	30	35	42	41	.....	.....
	Howguan	do	458	117	121	113	107	.....	.....
	Shaoguan	do	229	53	61	54	61	.....	.....
	Chachini	do	249	65	62	59	63	.....	.....

From this time forward the biennial reports of the Russian-American Company to the imperial ministerium of commerce gave the population of the Russian possessions in America as from 56,000 to 70,000. No authority for these statements existed, but they were repeated again and again until the sale of the country to the United States, though in the meantime several enumerations were made showing a very different result.

The first enumeration of the tribes on Norton sound and on the lower Yukon, or Kvikhpak, was accomplished by Lieutenant Zagoskin, of the Russian navy, during an exploration of that region in the years 1842, 1843, and 1844. It is, of course, impossible at this date to recognize all the names of villages given by Zagoskin, but as far as I can trace his count to personal observation, it appears to have been accurate. His exploration took place just after the whole region traversed by him had been depopulated by small-pox. In the table which is here reproduced, Zagoskin's division of the people into Christians and pagans has been omitted:

ENUMERATION BY LIEUTENANT ZAGOSKIN, I. R. N., OF NATIVES OF NORTON SOUND AND LOWER YUKON IN 1842
1843, AND 1844.

Tribes and villages.	Houses.	People.	Total.	Tribes and villages.	Houses.	People.	Total.
KANG-YULIT PEOPLE (INNUIT).				Tsonagogliakhten village	1	11	
<i>Chnagnute tribe, Norton sound.</i>				Tsogliakhten village	1	7	
Oonalaklik village	2	13		Khotilkakat village	4	65	
Nigvilnuk village	1	5		Oonilgachtkhokh village	2	17	
Kikhtaguk village	3	28		Nulato village	1	13	
Tachik village	3	19		Total Yunnakakhotana	23	289	289
Atkhvik village	4	57		<i>Inkilik tribe, Krikhpak river.</i>			
Tikmikhtalik village	4	45		Kunkhogliak village	2	11	
Pashtoilk village	7	116		Oolukak village	4	35	
Total Chnagnute	24	283	283	Tnttage village	2	32	
<i>Krikhpagnute, Krikhpak river.</i>				Kakagokhakat village	1	9	
Kavlanagmuto village	1	11		Khutulkakat village	2	16	
Nigikligrnute village	1	13		K-khaltat village	1	9	
Kanigmuto village	4	45		Khogoltlinde village	4	60	
Ankaehagnmuto village	6	122		Takaisk village	7	81	
Takchagnmuto village	3	40		Khnikakat village	1	11	
Ikuagmuto village	6	130		Total Iukillik	24	264	264
Nukhlungmuto village	4	60		<i>Tlegonkhotana, Tlegon river.</i>			
Ikognmuto village	5	92		Imoka village	3	44	
Ikallgvigmute village	3	45		Ttalitnl village	3	45	
P'nimute village	5	123		Total Tlegonkhotana	6	89	89
Total Kvikhpagnute	38	681	681	<i>Fugelnut, Krikhpak, and Kuskokvrim rivers.</i>			
<i>Kuskokvrimute, Kuskokvrim river.</i>				Insolnostleido village	2	33	
Khalkagnmuto village	5	120		Khuingitatekhten village	3	37	
Ookhagnmuto village	4	61		Iltenleiden village	6	100	
Tulunkagnmuto village	5	90		Tlegoshitno village	3	45	
Kvigimpalnagmuto village	4	89		Khuligichakat village	5	79	
Total Kuskokvigmute	18	360	360	Kvigimpalnagmuto village	3	71	
Total Kaug-yulit	80	.....	1,324	Vashlchagat village	5	80	
TTYNNAI PEOPLE (TINNEH).				Anvig village	5	120	
<i>Tunakhotana, Krikhpak river.</i>				Makkil village	3	44	
Noggal village	1	10		Anilakhtakpak village	8	170	
Miukhotlatuo village	3	46		Total Yngelnut	43	770	770
Total Yunnakhotana	4	56	56	<i>Goltzane, interior.</i>			
<i>Tunakhotana, Koyukuk river.</i>				Khunauilinde village	1	9	
Notaglita village	3	37		Tochotno village	1	9	
Tlialikakat village	3	27		Total Goltzane	2	18	18
Tashoshgon village	2	30		Total Ttynnai	102	.....	1,486
Tek-khakat village	1	0		Total Kaug-yulit	80	.....	1,324
Nok-khakat village	3	50		Grand total	182	.....	2,810
Kakhliakhlakat village	2	26					

The importance of Zagoskin's population statistics is altogether of a relative nature. He simply counted those whom he came in contact with, and made no estimates of people living away from his line of progress; hence I can make no comparison between his data and mine. But from this partial return it is seen that, then as now, the villages in the vicinity of the sea-coast were more populous than those of the interior, and that the houses of the Tinnel tribes must be of almost the same capacity as those of the Innuit. Of the former Zagoskin counted 1,486, living in 102 houses, making an average of nearly 15 inmates to each dwelling, while the Innuit counted by him numbered 1,324, in 80 houses, an average of a little over 15 to each dwelling. Among the Innuit the average number of dwellings in each village is nearly four, while the Tinnel villages average less than three.

From this time forward until the year 1860 no population returns of Russian America were published, with the exception of the petitions total of 56,000, contained in the brief biennial reports of the Russian-American Company, referred to above.

In 1860 the holy synod, the highest ecclesiastical authority in Russia, published in its annual report a census of Christians in Russian America, as furnished by the priests and missionaries stationed in the colonies. This included nearly all the natives under immediate control of the company, and was as follows:

CHRISTIANS IN RUSSIAN AMERICA IN 1860, EXCLUSIVE OF RUSSIANS.

Tribes.	Total.	Males.	Females.
Total	10,668	5,455	5,213
Creoles	1,676	853	823
Aleut (including Kaniags)	4,891	2,266	2,185
Kenalzoo	937	430	507
Chngach	456	226	230
Mednovtzo	18	17	1
Magmuto	19	18	1
Aglemute	39	19	20
Aziagmuto	206	105	101
Knkokvims	1,395	755	640
Kvikhpaks	379	220	153
Aguimuto	39	19	20
Ingalik	476	203	213
Koltchan	190	97	93
Koloshians	447	221	226

In 1861 Lieutenant Wehrman, of the Russian navy, but then in the employ of the Russian-American Company, compiled a census of the Kolosh or Thlinket tribes by settlements. Wehrman gave the number of free males and females and male and female slaves separately. The appended reproduction of Wehrman's table will show plainly that he obtained only the totals at each place and divided them subsequently:

THLINKET (KOLOSH) POPULATION IN 1861.

Villages.	Total.	FREE.		SLAVE.	
		Males.	Females.	Males.	Females.
Sitka villages	1,344	715	535	51	43
Khntznoo villages	600	280	280	20	20
Chilkhat villages	1,616	728	728	80	80
Kake villages	445	210	210	13	12
Takoo villages	712	335	337	20	20
Hoonyah villages	411	195	197	10	9
Tongass villages	333	154	154	13	12
Cross Sound villages	331	154	154	13	10
Assan Harbor villages	118	56	56	3	3
Knyutzk villages	262	120	120	5	5
Stakhine villages	697	308	308	41	40
Kaigan villages	753	280	280	99	99
Ltnia villages	590	265	267	29	29
Yakntat villages	380	163	108	25	24
Total	8,597	3,969	3,800	422	406
Total free	7,709				
Total slave	828				

If the totals of the above table be correct there appears to have been no increase or decrease in the numbers of Thlinket during the twenty years intervening between the count of Wehrman and that of Sir James Douglas, the latter having arrived at a total of 7,190 exclusive of the Sitkan clan, which numbers 1,344 in Wehrman's table.

During the last few years of the Russian-American Company's existence the population returns made by various colonial and inspecting officers appear very much confused. Thus we have two counts dated January 1, 1862, showing the same total, but differing very much in distribution. Both counts are incomplete, ignoring the Thlinket and nearly all the northern natives. One enumerates the people by race and tribe, the other by districts; they were printed by Tikhmenief in his *Historical Review*, as follows:

Russians	577
Foreigners.....	6
Creoles.....	1,892
Aleut (including Kadiaks).....	4,752
Kenaitze.....	927
Chugach and Atnah	719
Kuskokwims.....	1,283
	10,156
<hr/>	
Sitka district.....	988
Kodiak district	5,985
Oonalashka district.....	1,359
Atkha district	972
Kurile district	253
Northern district	545
Kenai district	54
	10,156
<hr/>	

In Tikhmenief's work no explanation is given that might enable us to analyze these puzzling figures. For instance, the 1,283 Kuskokwims could only be counted with the northern district, but the total of that district is given in the other list as only 545.

In 1863, in the second volume of his work, Tikhmenief published a table with the following heading: "Population statistics of inhabitants of Russian America dependent upon and actually counted by the Russian-American Company," as follows:

January 1, 1830.....	10,327
1831.....	10,423
1832.....	10,493
1833.....	10,800
1834.....	10,670
1835.....	10,867
1836.....	10,989
1837.....	11,022
1838.....	10,313
1839.....	8,070
1840.....	7,574
1841.....	7,580
1842.....	7,470
1843.....	7,581
1844.....	7,896
1845.....	7,224
1846.....	7,783
1847.....	7,874
1848.....	8,707
1849.....	8,892
1850.....	9,081
1851.....	9,273
1852.....	9,452
1853.....	9,573
1854.....	9,514
1855.....	9,660
1856.....	9,725
1857.....	9,792
1858.....	10,075
1859.....	9,902
1860.....	10,121
1861.....	10,136
1862.....	10,156
1863.....	10,125

This list ought to agree with the number of Christians reported by the holy synod, but in the year 1860, for instance, the priests and missionaries reported 547 Christians in excess of the "total counted" of the Russian-American Company. The above table is of importance chiefly as showing the effects of the small-pox epidemic, which appeared in the Russian colonies in 1837. During the first two years the loss was nearly 3,000, and the population gradually decreased from 11,022, in 1837, reaching its lowest point, 7,224, in 1845. During the second year of the epidemic the mortality was greatest, over 2,000; but it must be remembered that these figures relate only to those natives under the immediate control of the company and accessible to medical treatment and vaccination. If the mortality in these favored sections was 20 per cent., it is safe to assume that in the remote regions of the north, in the densely-peopled districts of the Yukon, Kuskokwim, and Bristol bay, it must have been fully 50 per cent., if not more. This assumption is borne out fully by the evidence of native tradition and ruins of depopulated and abandoned villages still in existence. The abandoned village-sites in the Yukon and Kuskokwim valleys far outnumber the settlements now inhabited, and whole populations villages were converted into cemeteries by the burial of the dead in their own dwellings. Such funeral towns are still frequently met with in the whole coast region of Alaska west of Mount Saint Elias. Among the Thlinket tribes, who practice cremation, the losses must have been equally great, but with them no traces of the universal calamity of nearly half a century ago remain, except in the blind and pox-marked persons of the few aged of both sexes.

We have still another count of inhabitants of Russian America, published in 1863 by a special inspector of the imperial government, Kostlivtzof, as follows:

INHABITANTS OF RUSSIAN AMERICA JANUARY 1, 1863.

Tribe.	Males.	Females.	Total.
Creoles.....	925	971	1,896
Aleut.....	1,286	1,192	2,428
Kenalzhe.....	430	507	937
Kadiaks.....	1,115	1,102	2,217
Chngach.....	226	230	456
	3,932	4,002	a 7,934
To this Kostlivtzof added an estimate of Atnah or Copper River natives.....			2,500
And Kolosh or Thlinket.....			20,000
Making a total of			30,434

a This is 2,191 less than the company's total for the same year, but the Russians and northern natives were omitted.

About as good an estimate as Veniaminof made over twenty years previously, if we except the classification. By reducing his estimate of Atnahs to 500, and that of Thlinket to 8,000, and classing 14,000 as northern natives, Kostlivtzof would have been nearer the truth and still within his own estimate of the total population of the present Alaska.

To show the extravagant estimates of the population of Alaska made at the time of its acquisition by the United States, I quote the following tables from the reports of Major-General Halleck, United States army, and of Rev. Vincent Collyer, both made in the year 1868:

MAJOR-GENERAL HALLECK'S ESTIMATE OF POPULATION OF ALASKA.

Koloshians: Ilydas	600
[Thlinket]:	
Henegas.....	500
Chatsinas [f]	500
Tongass.....	500
Stickeens [Stakhin]	1,000
Kakes [Kehk].....	1,200
Kous [?]	800
Kontzons.....	800
Awks.....	800
Samdam Takos.....	500
Chilkahs.....	2,000
Hoodsnahoos.....	1,000
Hunias.....	1,000
Sitkas.....	1,200
Hyaks.....	15,000
Kenalians [Athabaskans].....	25,000
Aleutian.....	10,000
Eskimo.....	20,000
Total.....	82,400

The Rev. Viueent Collyer, in his report to the commissioner of Indian affairs, reproduced General Halleck's wild estimate, and added a special estimate of the number of Kolosh or Thlinket, furnished by a trader, Mahoney, who certainly ought to have been better informed :

MAHONEY'S ESTIMATE OF THLINKET.		
Bering bay:		
Yakutat	300	
Stikine	1,200	
Tongass	800	
Admiralty island:		
Auk	750	
Cross sound:		
Whinega [!].	500	
Whinega (interior)	800	
Chilkah inlet:		
Chilkah	2,500	
Anega [!]	300	
Stephens passage:		
Takos	2,000	
Sitka	1,000	
Admiralty island:		
Hoodsinoo	1,000	
Kake	750	
Total Thlinket	11,900	

General Halleck's table, in addition to a general overestimate, contains such duplications as "Koutznoo" and "Hoodsnahoo", both the same tribe; "Kakes" and "Koos" also the same, and 15,000 "Hyaks", an imaginary tribe.

A single glance at any map of southern Alaska will reveal the utter absurdity of the Collyer-Mahoney estimate.

EDUCATION.

On the subject of education in Alaska but little is to be said. Under the admiuistration of the Russian-American Company schools were maintained at various stations, under the personal superintendence of the trader or agent, in which children of both sexes were taught during the winter season. Many competeut copyists, clerks, and book-keepers were furnished from these district schools. At Sitka these establishments were conducted on a more pretentious scale, with competent teachers (generally selected from naval and petty officers), scieutific apparatus, and facilities for studying navigation. This was a great step in advance from the first primary class established on Kadiak island in 1784, by Grigor Shelikhof and his wife; but from the beginning to the end of the Knssian company's rule that corporation, while apparently complying to the letter with the requirements of its charter relative to the maintenance of schools, arranged all educational facilities offered to the natives of Alaska with the sole objeet of benefiting the business of the company rather than with that of edueating the people. Bright youths among the creoles (offspring of Russian fathers and native mothers) were carefully traained in navigation and the meehanie arts, but they were compelled to remain in the company's service for fifteeu years after finishing their course of instruction. Competent masters of vessels, meehanies, and book-keepers were thus seured at small expense, and firmly bound to the company's interests, as there was no danger of their leaving the service if dissatisfied. Creole girls in limited numbers were trained to become honskeepers and wives of the employés of the company, who were thus preveuted from leaving the colonies. To the masses of the native population, however, educational facilities were not exteuded, as none of the Russian missionary stations maintained a school except for the training of children of the clergy. There was a seminary at Sitka for several years, in which many of the creole and native priests now officiating in Alaska received their first instruction, but this establishment was subsequently removed to Kamchatka. In the creole settlements of the Kadiak and Aleutian districts parents taught their children to write a little and read the catechism, prayers, and a few chapters of the Bible in the Russian language or one of the native dialects, and this rndimentary education is still found to exist in many of the isolated communities. Nearly all these schools were discontinued some years previous to the transfer of the country to the United States, when the Russian company was endeavoriug to relieve itself from the maintenance of schools, churches, and local government.

At present the only schools in all western Alaska where English is taught are on the Pribylof islands, and at Ilinliuk settlement, Oonalashka, both being maintained at the expense of a trading firm. The daily attendance in the seal-island (Pribylof) schools is kept up to an average of 56 on Sait Paul island and 16 on Saint George, through the constant efforts of government agents stationed on the islands. At Oonalashka, a village of nearly 300 inhabitants, the attendance varies from 10 to 20. Two other schools, where Russian only is taught, are reported at Belkovsky, in the Aliaska peninsula, and at Alexandrovsk, on the Nushegak river, with an average attendance of 6 for each. But in spite of these poor facilities, settlements like Kadiak, Belkovsky, Iliuliuk, Afognak,

where the creole element prevails, furnish an exhibit of from 50 to 75 per cent. of the population able to read and write in Russian or the native vernacular, or both. This is all that can be said concerning education in western Alaska.

In southeastern Alaska quite a different and more promising state of affairs exists. Here the Presbyterian board of missions has done much in the way of establishing schools and furnishing teachers for the same, and under its auspices a school and a home for girls have been maintained at Wrangell. The former institution has a daily attendance of from 60 to 100 pupils, while the home contains 30 inmates.

At Sitka a school was established in April, 1878, also under the auspices of the Presbyterian mission, with two teachers, which school is still in operation, with an average daily attendance of from 100 to 150. With the assistance of the naval commander at Sitka a school was opened there in 1879 for the benefit of the Russian-speaking children, whose parents felt scruples about sending their children to sectarian schools of another denomination. The attendance in this school is reported to average from 45 to 55.

At present the Presbyterian missionaries have schools in operation in the Chilkat villages, on Lynn canal, at the principal Hoonah village on Cross sound, and also at Kaigan, on the south end of Prince of Wales island, among the Hyda tribe.

A number of native Alaskan youths have also been received into the United States Indian school at Forest Grove, Oregon, but thus far they have all been selected from the pagan tribes of southeastern Alaska by the Presbyterian missionaries, while the bulk of native Alaskan population, located in the west, has been totally neglected. The natives and creoles all along the coast, from Mount Saint Elias westward, are too strongly wedded to the faith of the Greek Orthodox church (adopted by their forefathers nearly a century ago) to take kindly to sectarian schools of another denomination.

The Russian church claims on its registers 10,950 members, distributed as follows:

Sitka parish	275
Oonalashka parish	1,364
Belkofsky parish	633
Kodiak parish	2,606
Pribilof parish	372
Nushgak mission	2,848
Yukon mission	2,252
Kenai mission	600

Of these numbers at least half of those connected with the northern missions, or 2,500, may be safely struck off as fictitious; 1,013, the creoles, are semi-civilized, a small percentage being able to read and write, while the remainder are savages to all intents and purposes.

In the discussion of this subject, embodying as it does a vital interest to the people of Alaska, we are brought face to face with many natural and some artificial difficulties. In the first place, the limit to which a savage people, forced by all the pressure of a higher civilization, will progress has been repeatedly marked in the examples recorded of the educational disappointments and successes which have attended the efforts of our government and our clergy to elevate the minds and advance the comfortable living of our own immediate aborigines. If the youth of Alaska are to be lifted above their existing low medium level, in our opinion the government of the United States is the best able, from its position of strict neutrality among religious creeds, to promote the progress of simple elementary education among those people.

The Russian church, which is the dominant ecclesiastical power in Alaska, is of course poor, comparatively speaking, necessarily so, and the great majority of these chapels are in the hands of natives and creoles, who are not members of the clergy. A somnolent organization is their chief constitution, and they drone through the exercises of the church as appointed, preside at its calendar days of festivity, and then retire seemingly exhausted and desirous of repose. If anything can be done to reach these men, to invigorate and stir them up, it must come from the individual supervision and orders of some active, zealous head of the church.

Among the 7,000 or 8,000 members of the Russian church I have found less than 400 able to read and write in either the Russian, the Aleutian, or the Kodiak vernacular, though in the villages where parish churches are located quite 30 per cent. of the people possess these rudiments of education.

Not one of the three missions of the Yukon, Nushgak, and Kenai possesses a school, and in the village immediately surrounding the former (which now has a native missionary) I found but one man outside of the attaches of the church who could even speak the Russian language. The late Bishop Nestor had planned the establishment of a training-school for native boys from all parts of the territory at Oonalashka, but at his death the project was abandoned.

Among the Indians are found a quickness of apprehension and a lurking spirit of inquiry which point them out as capable of being very much benefited by an intelligent system of educational labor, provided it can be established in their country. They are, if anything, brighter and more desirous of learning than the Aleutians themselves, who appear, as a people, to be degenerating, owing to the hybridization constantly going on in their country.

The natives themselves are quickened into appreciation of the benefits of an education when they observe the advantages which those among their number who are conversant in the method and manner of conducting trade and keeping accounts have over the rest, and see the advancement of these to positions of trust and confidence by the traders. This practical application reaches them fairly and fully, where the most eloquent and cogent advocate of the abstract advantages of education would fail to make the slightest impression or to arouse a passing interest in their minds.

All those who now read and write, principally their own language, among the Aleutians as a class and the Kadiak people, have derived these elementary rudiments of instruction from the Greek Catholic church. The father who can read and write, as a rule, teaches his son, while the exercises of the church keep the lesson somewhat fixed in the juvenile mind.

At the location of all parish churches it is supposed or expected that schools will be maintained by the church authorities, but, as already mentioned, there is much laxity in this respect, and at least 20,000 natives are entirely without the remotest influence of church or school—a fact our boards of foreign missions might take into consideration.

Under existing circumstances the general government could extend educational facilities only through the medium of the Indian Bureau, a branch of administration having as yet no foothold in Alaska. The extension of all the complicated and expensive machinery of that bureau would be unwise, indeed, among tribes now entirely self-supporting and occupying no lands attractive to white men; but as an entering wedge, and an earnest of future civilization, fifteen or twenty youths might be chosen from various regions, instructed in some of the Indian schools (such as that at Carlisle, Pennsylvania, for instance), and, if found capable, trained as teachers in some normal school. Care should be taken in the selection of boys, who should be pure natives and not the offspring of traders and native women, in order to insure the desired future benefit.

Quite a large number of Aleutian youths have been, since the transfer, from one cause or another, taken down to San Francisco and the states east of the Rocky mountains, and there educated, and in all instances of which I have knowledge they have invariably returned, if living, to the country of their birth. This is simply natural, and needs no extended explanation.

DISEASES.

Those diseases which are most fatal to life in one section of Alaska seem to be applicable to all the others. In the first place, the native children, as they grow up, have little or no parental supervision or care in regard to clothing, etc., from a purely sanitary point of view; for the little fellows, male and female, for the first few years of their lives are more often naked than clothed at all seasons of the year, though the little girls, as a rule, earliest receive their garments. Exposed as they are in their manner of living to draughts, to insufficient covering, and cold nooks for slumber, they naturally at the outset of their rude lives lay the foundation for pulmonary troubles in all their varied degrees. Consumption is therefore the simple and comprehensive title for that disease which destroys the greatest number throughout Alaska. The Aleut, the Indian, and the Eskimo suffer from it alike; and they all exhibit the same stolid indifference to its stealthy but fatal advancement—no extra care, no attempt to ward it off, protect, or shelter against it, not even until the supreme moment of dissolution. (a)

After consumption, perhaps the largest number of deaths may be ascribed to scrofulous diseases, which, taking the form of malignant ulcers, eat into the vitals and destroy them, rendering the people of whole settlements sometimes lepers in the eyes of the civilized visitor; and it is hard to find a settlement in the whole country where at least one or more of the families therein has not the singularly prominent scars peculiar to the disease. Most of this scrofulous complaint being on the surface of the patient's body, as it were, one would naturally look for some care and attention on the part of the sufferer toward the alleviation of his own misery, while with regard to consumption, that being more concealed and less disagreeable both to the native and his associates, they are not likely to notice it in the way of applying remedies; but, so far as I know, the same apathy exists among the natives with regard to the treatment of the latter. It is, of course, immensely aggravated and made more violent by their neglect and filthy habits.

Following these two great sources of disease and death may be enumerated quite a number of other ills, such as paralysis, inflammation of the bowels, a few cases of fits, and a rather abrupt ending of advanced middle-aged life from what is called "general debility"; or, in other words, these people, as a rule, live to no great age, as might be inferred from the method and exigencies of their life. When a man or woman reaches his or her fifty years he or she is a rare example of the tribe; yet if he or she is free from rheumatic troubles, or the death-grasp of disease, it is never without injured vision; for it is a noteworthy fact that eye diseases necessarily arise from the smoky interiors of their barabaras and other places of residence, which, with the snow, so affect the eyes that the middle-aged are rarely without signs of decay, the various stages of granular ophthalmia being most marked.

For the prevention of snow-blindness the Eskimo people use their peculiar goggles, but the greater evil of smoke poison to the ophthalmic nerve is not overcome by any of them. Nearly all of the traders have their medicine-chests, and much relief and real kindness are extended by them to the suffering natives immediately about

^a A rather disgusting habit, common to all the uncivilized natives, may perhaps serve to spread the disease. Devoted wives carefully gather in cups or other receptacles the expectorations of their consumptive husbands (blood as well as mucus) and swallow them.

them wherever they are; but what they do or can do is a mere drop in the bucket. Hence it will be observed that the natives of Alaska are not a long-lived people as a rule, and when a very old person is found among them he gives evidence of what must have been in youth a magnificent constitution.

The Indian, Eskimo or Aleut, has not, however, an exalted idea of our pharmacy; in other words, he appreciates only forcible treatment and nothing else will satisfy him. As an example, of Epsom salts the traders are obliged to give, if they give any at all, to a suffering native, a great dose, or there is no effect whatever in the operation. Naturally the traders use only the very simplest remedial agent known to the apothecary. As a rule, however, of internal remedies, a child's dose ordinarily will act readily upon an adult native, while, on the other hand, applications to the skin—tinctures, liniments, etc.—must be of treble strength to produce the desired effect. For instance, tincture of iodine to reduce swelling on an Alaska native's body must be of such a strength that it would blister a Caneasian epidermis.

The natives themselves have no medicine whatever, nor any knowledge, as far as can be discovered, of any medicinal herb whatever—which is a very singular fact. All their lesser and slighter indisposition, arising from any natural cause, they treat by the universal and everlasting sweat-bath. This is their panacea, and this is all, except when they call in the “shaman” to either worry the unhappy patient to death, or to prolong his wretched existence for a period by stimulating perhaps an undue nervous tension, which causes the usually languid and resigned sufferer to rally, as it were, before the flame flickers out.

These people are certainly fatalists and are wonderful in their patience when suffering all the ills that flesh is heir to in their lonely, desolate homes.

In addition to the troubles for which the natives themselves are responsible, dreadful consequences arose from the introduction of small-pox, through Russian intercourse, first in 1838 and 1839. This disease swept like wild-fire up from its initial point at the confines of the southern limits of the Alexander archipelago over the whole length of the Aleutian chain, Cook's inlet, Bristol bay, and Kuskokwim, fading out in the north, until entirely checked by the Arctic cold. It actually carried in its grim grasp one-half of the whole population of Alaska to an abrupt and violent death. In certain places it swept out the entire population, being exceedingly virulent among the Thlinket of the Alexander archipelago. The physician who knows this, however, will readily understand how a people living as they have lived and yet live, with their strange apathy, ignorance of sanitary regulations, will be crushed before the onslaught of this disease. When La Pérouse visited this country, at Lituya bay he found natives (in 1786), to his great astonishment, marked by small-pox, which it seems the savages had contracted from a visit made to the coast to the southward by the Spaniards nine or ten years earlier; yet there is no definite knowledge that this epidemic in those early times even approximated the extent of the ravages of that which we have just cited. In 1843 and 1844 another outbreak of small-pox took place on the Aleutian islands, but the people did not suffer as they had previously done, great numbers of them having been vaccinated by the Russians in the meantime.

Upon this point the only interest or attention which these people have given to our medical practice is manifested; they occasionally ask why the American government does not send out its agents for the purpose of vaccinating their people, as the Russians did—a suggestion which, though late, may be timely.

Syphilitic disease was probably first introduced in Alaska by the Russians, though several writers claim that the scourge already existed in the Aleutian islands when the Muscovite hunters made their appearance there. At any rate, Captain Cook records that several of his crew contracted the disease during their brief stay on Oonalashka island in the year 1778. Syphilis yet exists in all coast settlements, chiefly in the vicinity of stations visited by shipping, and also in the interior where the people have constant intercourse with the sea-board. It is found in all stages and degrees, being entirely neglected by the natives themselves, and only at a few trading centers, where wealthy firms maintain physicians, and perhaps in the towns of southeastern Alaska, is anything done to check its ravages.

Another imported plague among these people is due to the introduction of the measles, a simple trouble with us, but of fatal power with them, assuming, doubtless on account of the exigencies of the climate and the natives' methods of life, the “black” form. It first ravaged Kadiak island and the mainland contiguous, on one or two occasions, and produced a panic also at Sitka. The climate of Alaska renders its treatment very difficult, and it is an exceedingly dangerous complaint there for those even who have the best of care and medical attention. The last extended occurrence of this disease took place during the winter of 1874-'75, principally confined to the Kadiak islands.

Typhoid pneumonia, also, from time to time, has wasted whole settlements, chiefly on the sea-board. The creoles and natives seem to yield at once to this disease, making scarcely any effort to resist its progress. It assumes an altogether epidemic form, its advance being easily traced as it is carried from one village to another by trading-vessels or canoes. During the last few years the number of skilled sea-otter hunters has been reduced nearly one-half by this disease.

In the absence of all vital statistics, the question as to whether the natives of Alaska are increasing or decreasing in numbers is difficult to answer, but as an individual opinion it may be stated that the inhabitants of the Aleutian archipelago, the peninsula, and Cook's inlet are to-day nearly as numerous as they have been at any

time since the destruction in 1838 and 1839 caused by the small-pox plague of that season. All authorities agree in saying that these people have never regained their former strength in point of numbers.

The Eskimo on the Arctic coast and Saint Lawrence island, utterly demoralized by the unchecked importation of spirituous liquors by whalers and traders, are rapidly decreasing under the alternate effects of wild intoxication and of starvation, the latter being the consequence of utter recklessness engendered by the former. Their extermination will probably follow that of the walrus—their staff of life—now being wantonly destroyed by thousands for ivory alone.

With reference to the Athabaskans of the interior and the Eskimo tribes south of Bering strait it may be said that they seem to be as numerous now as they were twenty years ago, and that they probably number as many as the country will support, always bearing in mind their extraordinary wastefulness in seasons of plenty. Were they provident, they might live by tens where a single one exists now.

The Thlinket of southeastern Alaska have perhaps the greatest vitality of any of the Alaskan tribes. At present they are under the influence of Presbyterian missionaries, and we may hope for a gradual amelioration in their mode of life and the introduction of some regard for sanitary measures. Living in more intimate relations, and in constant and universal contact with Caucasians, the Thlinket are subject to the drawbacks as well as the advantages of such an association; but taking everything into consideration, a rapid decrease of native population in this section of Alaska need not be apprehended, and there is possibility of increase in the future.

POLITICAL STATUS.

Alaska is now, and has been since its acquisition by the United States, "a thing which it is not," a territory in name only, without its organization. It is a customs district, for the collection of customs only, with a collector and three deputies separated by hundreds and even thousands of miles. It has no laws but a few treasury regulations, with no county or other subdivisions, and, of course, no capital. The collector of customs and the only representative of police restrictions—a man-of-war with its commander—are located at Sitka, cut off from all communication with the bulk of the territory except by way of San Francisco.

In the strip of country between cape Fox and Mount Saint Elias, 300 miles long by from 30 to 60 miles wide, including islands containing about 29,000 square miles, there are at present possibly 1,500 whites and creoles able to perform the functions of citizenship, and 7,000 wild Indians; about enough for a small county organization.

In all the western region there are 139 white males and 5 females, including 3 boys and 1 girl. Though not speaking English, among the creoles might be found between 400 and 500 sufficiently intelligent to understand what constitutional government means, making an average of less than one possible citizen for every 600 square miles of superficial area, without regard to the fact that many of the men are foreigners.

The main difficulty of organizing or legislating for Alaska lies in the utter impossibility of reconciling the widely-diverging interests and wants of two sections, entirely separate geographically, and having no one feature alike, beside being very unequal in size. The general map accompanying this report will illustrate this at a glance. The only practical and economical solution of the question will be to treat each section separately.

A reference to the map will impress the observer with the vast distance, in many cases, from one settlement to its neighbor, rendering, as a rule, communication between the small villages and settlements of the territory infrequent and rare, San Francisco being the central point for information received annually from the whole territory: for instance, the people of Kadiak or Ounalashka hear from and learn of any one in Sitka by the "Golden Gate," and *vice versa*.

The only official knowledge which the government has or can have of the condition of affairs in Alaska has been and must be derived from the cruising of the revenue-marine steamers, and from the commander of the naval vessel stationed in the Alexander archipelago, who monthly reports the natives "in all parts of Alaska" quiet and peaceable.

The mail line established between Sitka, Wrangell, and Port Townsend, in Puget sound, is the only branch of the postal service extended over Alaska.

MEAN TEMPERATURE AT VARIOUS POINTS IN ALASKA.

The following table shows the means of temperature for the months of January and July at various points in the territory:

	In January.	In July.
	Deg.	Deg.
Sitka	+30	+55
Tongas	+33	+58
Wrangell	+22	+58
Kadiak	+28	+57
Coast of Bering sea	-10	+50
Yukon basin.....	-20	+65
Saint Michael.....	+ 3	+54
Pribylof islands.....	+28	+46

A FEW REMARKS ON SPELLING OF RUSSIAN AND NATIVE NAMES.

In spelling the Russian and Alaskan names and terms throughout this report I have endeavored to represent Russian and native sounds by their true phonetic equivalents in the English alphabet.

The Russian names and words ending in *off*, *or*, or *or*, as heretofore variously spelled, should be written *of*, the pronunciation being exactly that of the English word "of": for instance, *Baránof*, *Veniamínof*; in the possessive case, however, or in the plural, the sound of "v" always takes the place of the "f", e. g., *Baránorá*, *óstrora*, etc.

In words like Kamehatka the letters *ch* represent the full phonetic value of the corresponding Russian letter. The old way of spelling it, Kamsehatka, is purely German, and not to be tolerated in an English work.

The Russian and native strong aspirate, resembling somewhat the German *ch* in *Woche*, I have represented by *kh*.

Profiting by observance of linguistic defects in former publications on Alaska I have abstained as much as possible from the use of Russian or native terms. The few such terms retained for the want of a good English equivalent are:

Barábara, a term of Siberian origin for a semi-subterranean hut or dwelling.

Beluga, the white grampus or white whale.

Bidár, a Kamehatkan word, an open boat, with a wooden frame and covered with seal, sea-lion, or walrus skin.

Bidárka, a skin-canoe of the Arentians, covered all over, with the exception of one, two, or three circular openings to accommodate as many paddlers.

Kaiak, Eskimo skin-canoe.

Kamleïka, a Siberian term, water-proof shirt of seal, whale, or bear gut.

Parka, a Kamehatkan word, upper garment of fur, with small head-opening and sleeves, varying in length.

Promyshlénik, a Russian word for fur-hunters or laborers, now obsolete.

Shamán, a Kamehatkan term for sorcerer or medicine-man, used by many tribes who once were subject to Russian influence.

Toyón, Kamehatkan term for chief, introduced by Russians. *Tuyúk* and *Tookoo* with Arentians and other tribes.

Tundra, a Siberian term, a moor, morass, or swampy plain, producing a dense growth of mosses and grasses over a frozen subsoil and ice, which does not thaw to a greater depth than 18 inches below the surface.

Tíngak, a term used by certain Eskimo tribes for a shaman or conjurer.

CHAPTER II.—RESOURCES.

The territory of Alaska, so called, an area nearly equal to one-sixth of the whole United States and territories, is a region to which the attention of the American people was very suddenly and earnestly directed in the summer of 1867, when it was secured as a measure of diplomacy and good will between the American and Russian governments. The Russians, who occupied the land with an eye primarily to the fur-trade and its dependencies, retired from that country, leaving us a generally correct map of the vast extent of rugged coast, locating its people in a measure correctly, with some facts and figures bearing upon the resources, natural history, and trade, which have since been found to be quite accurate, but which at the time of the transfer were so clouded and distorted by the advocates of the purchase and its opponents that the real truth in regard to the subject could scarcely be observed.

When the United States took possession of Alaska a great many active and ambitious men on the Pacific coast were imbued with the idea that much that was really valuable in Alaska in the line of furs and the precious metals would be developed to their great gain and benefit if they gave the subject the attention which it deserved. Accordingly, many expeditions were fitted out at San Francisco, Puget sound, and other points on the Pacific coast, and directed to an examination of these reputed sources of wealth in that distant country. Thirteen years have rolled by, and in that time we have been enabled to judge pretty accurately of the relative value of this new territory in comparison with that of our nearer possessions, and it is now known that the fur-trade of Alaska is all and even more than it was reputed to be by the Russians.

In this connection the most notable instance, perhaps, of the great value of these interests may be cited in the case of the seal islands. It will be remembered that at the time of the transfer, when the most eloquent advocates of the purchase were exhausting the fertility of their brains in drumming up and securing every possible argument in favor of the purchase, though the fur trade of the mainland, the sea-otter fisheries, and the possible

extent of trade in walrus oil and ivory were dwelt upon with great emphasis, these fur-seal islands did not receive even a passing notice as a source of revenue or value to the public. Yet it has transpired, since the government has been wise enough to follow out the general policy which the Russians established of protecting the seal life on the Pribylوف islands, that these interests in our hands are so managed and directed that they pay into the treasury of the United States a sum sufficient to meet all the expenses of the government in behalf of Alaska, beside leaving a large excess every year.

Of other resources, such as the adaptation of the country for settlement by any considerable number of our people as agriculturists or husbandmen, and its actual value as a means of supplying gold and silver, coal or timber, it must be said that as yet no very remarkable gold or silver mines have been discovered, nor have there been any veins of coal worked that would in themselves sustain any considerable number of our people or give rise to any volume of trade.

The timber of Alaska in itself extends over a much larger area of that country than a great many surmise. It clothes the steep hills and mountain sides, and chokes up the valleys of the Alexander archipelago and the contiguous mainland; it stretches, less dense but still abundant, along that inhospitable reach of territory which extends from the head of Cross sound to the Kenai peninsula, where, reaching down to the westward and southwestward as far as the eastern half of Kadiak island, and thence across Shelikhof strait, it is found on the mainland and on the peninsula bordering on the same latitude; but it is confined to the interior opposite Kadiak, not coming down to the coast as far eastward as cape Douglas. Here, however, it impinges on the coast or Cook's inlet, reaching down to the shores and extending around to the Kenai peninsula. From the interior of the peninsula, above referred to, the timber-line over the whole of the interior of the great area of Alaska will be found to follow the coast-line, at varying distances of from 100 to 150 miles from the sea-board, until that section of Alaska north of the Yukon mouth is reached, where a portion of the coast of Norton sound is directly bordered by timber as far north as cape Denbigh. From this point to the eastward and northeastward a line may be drawn just above the Yukon and its immediate tributaries as the northern limit of timber of any considerable extent. There are a number of small water-courses rising here that find their way into the Arctic, bordered by hills and lowland ridges on which some wind-stunted timber is found, even to the shores of the Arctic sea.

In thus broadly sketching the distribution of timber over Alaska it will be observed that the area thus clothed is very great; yet when we come to consider the quality of the timber itself, and its economic value in our markets, we are obliged to adopt the standard of the lumber-mills in Oregon and Washington territory. Viewed in this light, we find that the best timber of Alaska is the yellow cedar, which in itself is of great intrinsic value; but this cedar is not the dominant timber by any means; it is the exception to the rule. The great bulk of Alaskan timber is that known as Sitka spruce, or balsam fir. The lumber sawed from this stock is naturally not of the first quality.

The fisheries, which I shall speak of hereafter, as also of the fur-trade, cover a very large area, but their value and importance, in consequence of the limited market afforded for exportation on the Pacific coast, has not been fully developed. The supply certainly is more than equal to any demand.

The soil of Alaska is not sterile, being at many points of the requisite depth and fertility for the production of the very best crops of cereals and tubers. The difficulty with agricultural progress in Alaska is, therefore, not found in that respect; it is due to the peculiar climate.

Glancing at the map the observer will notice that hydrographers have defined the passage of a warm current, sufficient in volume and high enough in temperature to traverse the vast expanse of the North Pacific from the coast of Japan up and across a little to the southward of the Aleutian islands, and then deflecting down to the mouth of the Columbia river, where it turns, one branch going north up along the coast of British Columbia by Sitka, and thence again to the westward until it turns and bends back upon itself. The other grand arm, continuing from the first point of bifurcation, in its quiet, steady flow to the Arctic, passes up to the northeastward through the strait of Bering. (a) This warm current, stored with tropical heat, gives rise naturally, as it comes in contact with the colder water and air of the north, to excessive humidity, which takes form in the prevalent fog, sleet, and rain of Alaska, as noted and recorded with so much surprise by travelers and temporary residents from other climes. Therefore at Sitka, and, indeed, on the entire sea-board of South Alaska and the Aleutian islands, instead of finding a degree of excessive cold carried over to the mainland across the coast range, which the latitude would seem to indicate, we find a climate much more mild than rigorous; but the prevalence of fog clouds or banks, either hanging surcharged with moisture or dissolving into weeks of consecutive rain, so retard and arrest a proper ripening of fruits and vegetables in that climate that the reasonable certainty of success in a garden from year to year is destroyed.

When we look at Alaska we are impressed by one salient feature, and that is the remarkable distances which exist between the isolated settlements. It is not at first apparent, but it grows on the traveler until he is profoundly moved at the expenditure of physical labor, patience, and skill required to traverse any considerable district of that country.

^a The existence of this northern branch of the warm Japanese current has been denied by Mr. William H. Dall, of the United States coast and geodetic survey.

The Sitkan district is essentially one of rugged inequality, being mountainous on the mainland to the exclusion of all other features, and equally so on the islands. It is traversed here, there, and everywhere by broad arms of the sea and their hundreds and thousands of lesser channels.

Land travel is simply impracticable. Nobody goes on a road; savages and whites all travel by the water. Perhaps the greatest humidity and the heaviest rainfall in the Alaskan country occur here. The equable and not rigorous climate permits of free navigation at all seasons of the year, and it is seldom indeed that the little lakes and shallow lagoons near the sea-level are frozen so firmly as to allow of a winter's skating.

The Aleutian and Kadiak districts are quite as peculiar in themselves and as much individualized by their geological age and formation as is the Sitkan division. They hold within their boundaries a range of great fire-mountains—grumbling, smoking, quaking hills; some of these volcanic peaks being so lofty and so impressive as to fix in the explorer's eye an image superb and grand, and so magnificent as to render adequate description quite impossible. Like the Sitkan district, the Aleutian and Kadiak regions are exceedingly mountainous, there being very little low or level land compared with the sum total of their superficial area; but in that portion extending for 1,100 miles to the westward of Kadiak, nearly over to Asia, bare of timber, a skeleton, as it were, is presented to the eye and strikes one with a sense of an individuality herein decided contrast with that of the Sitkan country. The hills not clothed with timber are covered to their summits in most cases with a thick crop of circumpolar sphagnum, interspersed with grasses, and a large flora, bright and beautiful in the summer season. To thoroughly appreciate how much moisture in the form of fog and rain settles upon the land, one cannot do better than to leave the ship in the harbor, or the post where he is stationed, and take up a line of march through one of the narrow valleys near by to the summit of one of the lofty peaks. He will step upon what appeared from the window or the vessel a firm green sward, and sink to his waist in a shaking, tremulous bog, or slide over moss-grown shingle, painted and concealed by the luxuriant growth of cryptogamic life, where he expected to find a free and ready path.

Passing from this district, a very remarkable region is entered, which I have called the Yukon and the Kuskokwim divisions. I have during two summers traversed the major portion of it from the north to the south, confirming many new and some mooted points. This region covers the deltaic mouth of a vast river, the Yukon, and the sea-like estuary—the Amazonian mouth of another—the Kuskokwim, with the extraordinary shoals and bars of Bristol bay, where the tides run with surprising volume. The country itself differs strikingly from the two divisions just sketched, consisting, as it does, of irregular mountain spurs planted on vast expanses of low, flat tundra. It is a country which, to our race perhaps, is far more inhospitable than either the Sitkan or Kadiak divisions; yet, strange to say, I have found therein the greatest concentrated population of the whole territory. Of course it is not by agricultural, or by mining, or any other industry, save the aboriginal art of fishing and the traffic of the fur-trade, that the people live; and, again, when the fur-bearing animals are taken into account, the quality and volume of that trade are far inferior to those of either of the previously-named divisions, and we find the natives existing in the greatest number where, according to our measure of compensation, they have the least to gain.

This country, outside of these detached mountain regions and spurs, is a great expanse of bog, lakes, large and small, with thousands of channels between them, and sluggish currents filled with grasses and other aqueous vegetation, indicated to the eye by the presence of water-lilies.

The traveler, tortured by mosquitoes in summer, blinded, confused, and disturbed by whirling "purgas", snow, and sleet in winter, finding the coast rendered almost inaccessible by the vast system of shoaling which the current of the great Yukon has effected, passes to the interior, whose superficial area comprises nearly five-sixths of the landed surface of the territory.

Here is an immense tract reaching from Bering strait, in a succession of rolling ice-bound moors and low mountain ranges, for 700 miles an unbroken waste, to the boundary-line of British America. Then, again, from the crests at the head of Cook's inlet and the flanks of Mount Saint Elias northward over that vast area of rugged mountain and lonely moor to the east—nearly 200 miles—is a great expanse of country, over and through which not much intelligent exploration has been undertaken. A few traders and prospectors have gone up the Teuanah and over the old-established track of the Yukon; others have passed to the shores of Kotzebue sound overland from the Koynukuk. Dog-sled journeys have been made by these same people among the natives of the Kuskokwim and those of the coast between Bristol bay and Norton sound. But the trader as he travels sees nothing, remembers nothing, but his trade, and rarely is he capable of giving any definite information beyond the single item of his losses or his gains through the regions he may traverse. We know, however, enough to say now, without much hesitation, that this great extent which we call the interior is by its position barred out from occupation and settlement by our own people, and the climatic conditions are such that its immense area will remain undisturbed in the possession of its savage occupants, man and beast.

The subject of the agricultural resources of the country will, however, form the topic of another chapter in this report.

THE FURS OF ALASKA.

Of the various industries of Alaska the fur-trade is one that may be discussed in a satisfactory manner, because we have authentic records of shipments, prices, and management reaching to the beginning of this and even to the middle of the last century. At the Siberian ports of Okhotsk, Bolshere茨k, and Petropavlovsk regular and generally reliable registers were kept of all furs arriving from the east, including the islands as well as the coast of the American continent. The figures obtained from these records may safely be considered below rather than above the actual numbers, because, as the Russian government exacted a tithe or other percentage from all shipments, some shippers endeavored to smuggle through as much as they could without reporting it.

Even at this late day it is possible to apply a check to the totals of importation of furs from the region now called Alaska, by comparing the same with equally authentic figures of transactions in furs and teas on the Chinese frontier, and at Irkutsk, the center of the trade of all Siberia.

Of the large number of furs, principally sea-otter, that found their way to Europe or China directly in the vessels of American and English traders toward the end of the eighteenth century and in the beginning of the nineteenth we have full statements in the published journals of these vessels.

Only two instances of shipments of furs from Alaska to France are known—the famous expedition of La Pérouse, which touched this coast in the year 1788, and the trading venture by merchants of Marseilles, who sent out a ship under the command of Roqueneville, in the year 1818. This French captain, who had sailed with the most sanguine expectations of opening a new field of operations to the venturesome traders of Marseilles, and of ultimately establishing a rival traffic to that of the East India Company, was doomed to disappointment. The poor quality of his trading-goods was one of the causes of his failure among Indians, who had for long years reaped the benefits of fierce rivalry between English, American, and Russian traders. He states in his own narrative that he looked upon the inferior grade of woolen goods with which he had been furnished in France as the chief cause of his ill-success in trading with the natives. He boasted, however, of the superior quality of French muskets, but as he confesses to having paid as much as a musket and 12 pounds of powder for a single sea-otter skin, it seems that he profited but little by the superiority of the article. After a summer's cruise among the islands of the Alexander archipelago Roqueneville came to the conclusion that as a mere trader he could not succeed, and therefore followed the example of the Americans in organizing a hunting expedition on joint account with Baranof, the chief manager of the Russian colonies. In this venture also he met with misfortune; being fitted out with Aleutian hunters, he was compelled to sign an agreement to pay the sum of \$200 for any native who might lose his life while in his employ, by drowning or at the hands of hostile natives. In the course of his expedition 26 Aleut hunters were killed by the Hydas, on Prince of Wales island, and as the number of sea-otters secured did not exceed 200, Roqueneville left the port of Alaska somewhat disgusted, and reported that there was no field for French enterprise on the northwest coast of America.

The American and the English explorers and traders continued for many years to hunt sea-otters with Aleutians and their bidarkas, furnished by Baranof and his successors, but as their operations were chiefly carried on along the coast of New Albion or California the results of these ventures do not fall within the scope of this report.

The English and the American sea-captains who visited Prince William sound and the Alexander archipelago previous to Vancouver's voyage reaped the most abundant harvest of sea-otters in that section of the territory, as many as 2,000 skins being secured by a single vessel in one season; and at the beginning of the present century Baranof estimated that 120,000 sea-otters were carried away by "foreigners". The prices even at that early day were remarkably high, and we find instances of ten and twelve blankets, and even \$40 in cash, having been paid for a single skin. The Russians, who were compelled to transport all their trading-goods across the Asiatic continent and then by ships from Okhotsk, were not slow to discover that it was impossible to compete in trade with their English and American rivals. The valuable animal was rapidly becoming extinct in the more accessible hunting-grounds, and Baranof concluded to extend the old policy of hunting, in preference to trading, to the sea-otter ground of the southeast. He summoned large numbers of Aleuts and natives of Kadiak, with their bidarkas, and peremptorily ordered them to proceed to his new settlement at Sitka, hunting on the way. Parties composed of 600 and 800 canoes each set out upon this perilous journey of over a thousand miles, following the line of the coast. One-third of the fleet was lost on the way. Some of the natives were surprised by violent storms in crossing the open sea from one promontory to another, while others suffered death at the hands of hostile Indians of the mainland. Those who finally reached their destination were divided into smaller parties and sent out to hunt in the intricate inlets, streams, and forests of the country. Some never returned to report either their success or their losses. The association of Siberian merchants organized in 1785 to carry on the fur-trade of the north Pacific had the favor of the empress Catharine, but the first formal charter was granted by the emperor Paul in 1799. When hunting in that region became no longer profitable the Russian-American Company continued to purchase of the Indians a few sea-otters killed by them, but, owing to the vicinity of the Hudson Bay Company, the prices paid for these skins were exceedingly high. While the Aleut and Kadiak Innuitt who were compelled to hunt for the

company received but \$10 for the very best grade of sea-otter, the independent Thlinket sold the same quality for \$30 and \$40 at Sitka. The manager of the Russian company acknowledged that no profit was derived in these transactions; that the skins were purchased only to prevent their acquisition by the Hudson Bay Company.

On the Aleutian islands the killing of sea-otters was brought into system and order as soon as the Russian-American Company obtained control of the country by their charter in 1799. At first the company claimed the right to employ the Aleutian hunters in the pursuit of the sea-otter without any compensation beyond their subsistence as an offset to their exemption from imperial taxes and other duties. This profitable but unjust procedure was abolished by the emperor Alexander I, and the company was instructed to pay the Aleutian hunters for every skin deposited in the company's storehouses. The emperor's manifesto was complied with, but the price paid to the Aleutian hunters for sea-otter skins was ridiculously small; only 10 rubles of colonial scrip or leather currency being paid to the hunter for a first-class skin, and he was required to furnish his own subsistence, with the exception of a few articles of luxury—a very small quantity of flour and tobacco. Even in those early times the Russian-American Company realized from \$50 to \$100 for their skins in the markets of Asia and Europe.

When the Russian hunters and traders first advanced from the coast of Asia along the Aleutian chain of islands the expeditions fitted out by Siberian merchants, consisting of one or two small vessels, were generally absent from five to seven years, and at the end of that time returned with from 2,000 to 7,000 sea-otter skins. Their primitive crafts were of such wretched construction that fully 50 per cent. of these valuable cargoes were lost by shipwreck. In spite of these losses, however, the value of sea-otter and fur-seal skins imported through the port of Okhotsk was estimated at the end of the eighteenth century at nearly 2,000,000 rubles per annum, of which the imperial government exacted one-tenth as royalty from the hunters. Under the indiscriminate slaughter of many rival hunting expeditions the sea-otter disappeared rapidly, and when the Russian-American Company at last obtained exclusive control of the whole business the annual catch did not exceed 1,500 skins for nearly half a century succeeding their first charter, and at no time during the existence of the company was it officially reported as exceeding 2,000. The policy adopted by the Russian company was to hunt thoroughly over a certain sea-otter ground for two successive years and then let it remain undisturbed for three years following, but even under this careful management the total catch did not increase to the figure attained since the transfer of the country to the United States. Certain islands and their outlying rocks were more prolific in the valuable animals than they are at present, but the total yield of sea-otter skins is now five or six times what it was then.

It is true that we find such entries as the following in the records of the custom-house of Okhotsk in a single year: "The ships of the promyshleuiks discharged at the custom-house in the year 1770 16,000 sea-otters, 23,000 sables, 2,400 black foxes, 14,000 red foxes, 25,000 fur-seals, 36,000 blue foxes, valued at 2,000,000 rubles, and the traders estimate the value of goods given in exchange at 200,000 rubles"; but it must be remembered that the entries of that one year may have been the result of the transactions of several ships during four or five years.

The imperial chamberlain, Rezauof, who visited the Russian colonies in America between 1805 and 1807, estimated the value of sea-otters exported annually from the colonies at 80,000 rubles. Somewhat later, in 1817, the artist Choris, who accompanied Kotzebue in his voyage around the world, reported the annual catch of this valuable animal as worth from 100,000 to 150,000 rubles. The official reports of the company, however, showed a much smaller estimate; but it is safe to state that from the time of Kotzebue's visit to the Russian colonies until their transfer to the United States no less than 2,000 sea-otters were placed in the market every successive year, and also that to those shipments alone was due the maintenance of Russian colonies on this continent.

Of the profits accruing to the Russian-American Company from this traffic, from 300,000 to 400,000 rubles were annually disbursed to employees in the colonies, but nine-tenths of this sum was ultimately carried to Russia, only a small fraction finding its way into the hands of the natives of the country. At present the change in the way of conducting the business is so great as to leave 50 per cent. of the value of furs, at the lowest calculation, in the territory. On the other hand, the value of furs shipped from the territory is also vastly increased.

In scanning the tables appended to this chapter the reader may easily trace the decrease or increase of sea-otters from year to year, and the great discrepancy between the yield of the present and of former time cannot fail to attract his attention. The remarkable increase of shipments in our time is due solely to the increased inducements to the natives to exert themselves to the utmost, in order to satisfy the new wants growing upon them every year. The minimal certainly existed in the same numbers in former times, but whenever a large body of them moved from one feeding-ground to another no effort was made to trace or follow them up as is done now. As far as can be ascertained the greater slaughter of the sea-otter has not reduced the number existing in the Alaskan waters to any perceptible extent, and at present the shipments increase from year to year. In due course of time, however, the collapse must come, and the black cloud of prospective ruin and starvation is even now rising within the poor Aleut's limited scope of vision.

At an early day in the history of the Russian colonies in America transactions in the skins of fur-seals began to rival in magnitude those in sea-otter skins. During the year immediately preceding the discovery of the Pribylot group, in 1786, over 500,000 fur-seals were killed by the Russian hunters (Veniaminov makes these figures 2,000,000), and the animals were almost extirpated from the islands. Fully one-half of the skins taken during that period were

thrown into the sea in an advanced stage of putrefaction, poisoning the waters around the islands to such an extent as to drive away the seals for several seasons. It was soon discovered that the Chinese merchants of the Siberian frontier placed a high value upon these skins, frequently refusing to exchange their teas for any other equivalent, but when the Russian-American Company obtained its exclusive privileges the fur-seals were so nearly extinct that the company's traffic in their skins was at first quite insignificant. The chamberlain Rezanof, above mentioned, was the first to observe the threatened extinction of the trade, and promptly applied the remedy by prohibiting the killing of seals for a period of five years. At the end of that time the shy animals had returned and multiplied sufficiently to afford a regular and reliable source of revenue. On the Pribylol islands, as on the Aleutian group, the company paid native hunters for each skin secured, but the price was out of all proportion to the value, 40 and 50 cents each being all the poor Aleut obtained for skins worth then \$40 in the Chinese market. Under the circumstances it was natural that these poor fellows did not relish life on the barren, desolate islands, and frequently asked to be relieved by other laborers.

These seal islands were early looked upon by the Russian managers as an unfailing treasury from which to draw in times of need. At the beginning of this century, when breadstuffs and other provisions were shipped to the colonies through Siberia, frequently failing to arrive at the proper time, the chief manager, Baranof, was obliged to purchase whole cargoes of goods and provisions from the English and American traders, and, having no money on hand for such transactions, he hit upon the expedient of paying in fur-seals, a currency always at hand when needed. At first this mode of payment was profitable enough, the captains accepting each skin as an equivalent for a Mexican dollar. These transactions becoming known, expeditions were fitted out in England and at New York and Boston with the sole view of exchanging cheap provisions for fur-seals at Sitka and then selling the latter at an immense profit in Chinese ports. The managers of the Russian company in St. Petersburg heard of this traffic and ordered the shipment of seal-skins to China direct on account of the company, but being continually in want of provisions the manager of the colonies could not always comply with his instructions, though he succeeded in raising the price of skins from one to two dollars.

An end was finally put to these transactions by a peremptory order from St. Petersburg to make no further payments in fur-seals. The reason for this order was a very sharp transaction on the part of a Yankee trader who had sold a cargo of provisions to Baranof at Sitka, receiving fur-seals at the rate of one dollar each in payment, and then crossed over to Kamchatka with his ship and sold the skins to the agent of the same company at that place for three dollars each.

At the time of Pribylol's discovery of the seal islands they were found to be uninhabited, and the vast numbers of seals shipped during the first decade succeeding were killed by laborers from Oonalashka and Atkha islands hired for a period of years. These Aleuts were engaged at a fixed annual salary, being relieved from time to time by others, generally at their own request. It will thus be seen that from the very beginning the Russians recognized no proprietary rights to the fur-seals as vested in the Aleuts. Subsequently, when the Russian-American Company assumed control, these laborers were allowed, and even compelled, to remain for longer periods of time, sometimes for a whole generation, as the company by its charter became sole owner of everything within the limits of the Russian colonies in America; and, consequently, every fur-bearing animal killed by natives was considered as killed for the company, payment being made in the shape of compensation for the natives' time or labor. The paragraph in the imperial charter of the company defining its rights invested that organization with full proprietary title to "all products of the sea and land, including even birds of the air, and whatever might be found in the interior of the earth".

In 1805, as already mentioned, the seal islands were visited by Rezanof and Langsdorff. The former did all in his power to arrest the indiscriminate slaughter of seals by removing one-half of the men engaged in killing, and prohibiting shipments of skins for five years thereafter. Langsdorff, on the other hand, in his voluminous reports called the attention of the imperial government to the threatened extinction of fur-seals, making the rather remarkable statement that 30,000 seals had been killed for food by the laborers on the islands, the skins being thrown away; and also that he had observed in the month of May a school of fur-seals moving southward and covering the surface of the ocean for a distance of two nautical miles. Langsdorff presumed that this abnormal movement, entirely at variance with the habits of the animal, was caused by the indiscriminate onslaught of Aleut hunters on the islands of Saint Paul and Saint George.

The measures adopted by Rezanof certainly proved effective, as only ten years later Kotzebue stated that from these two seal islands the Russian-American Company derived the most regular and ample revenue in all its vast possessions. The skins that had accumulated on the islands previous to Rezanof's arrival had been most carelessly cured by a crude process of drying over fires. Of 60,000 skins shipped from there to Canton by the ship Neva, 30,000 were thrown overboard within a day's sail of Canton in an advanced stage of putrefaction. Gradually, however, improvements were introduced in the management of the business and in the processes of curing and packing. The art of preparing seal-skins for the market by plucking and dyeing was an invention of the Chinese, reported by the Russian-American Company's agent at Okhotsk as early as 1799. The exact date at which this process was adopted by English furriers cannot now be ascertained, but it is safe to presume that it was early in the present century, as a regular demand for these skins in England can be traced to that time.

At a later period—about the year 1850—shipments directly to New York were made, and these continued at the rate of from 5,000 to 10,000 skins every year until the transfer of the territory.

When the acquisition of the Russian colonies was advocated before Congress no mention was made of any trade in fur-seals, but the annual average of fur-seal shipments from the Pribylof islands to England, the United States, and China from 1820 to 1867 was 42,000 skins, or an aggregate of 1,974,000 in forty-seven years.

It is not easy to explain why the Russians failed to work this "seal-mine" to its full capacity. In the reports of the agents on the islands to the chief manager at Sitka subsequent to 1820 we find a constant repetition of the statement that the seals were increasing in number, accompanied by a request for permission to kill a number of old seals for the purpose of obtaining oil from their blubber, and in one instance this request was granted, and in a year or two after the discovery of gold in California, when fur-seal oil sold in San Francisco at \$4 per gallon. The skins of these oily old patriarchs were of no value.

It is, however, altogether due to the excessive care exercised by the Russian authorities that the fur-seals did not become extinct on the islands during the years intervening between the sale of the territory and the passage of the act of Congress making the Pribylof group a treasury reservation.

By that time the accumulation of seals had become too great to be affected by the killing of over a million within three years. The present limitation to 100,000 seals per annum was based upon the most careful observations and estimates; but it has long since become evident that, as far as any danger of extirpation is concerned, the number might safely be doubled. A change of fashion may take place at any time and depreciate, at least temporarily, the product of these islands; the beauty and durability of the material, however, are such as to insure its consumption to some extent among the votaries of fashion for an indefinite period, and just so long Alaska can be made a valuable possession without reference to any other sources of wealth that may be developed within its boundaries.

The sea-otter is an exceedingly shy and sensitive animal and does not congregate in any great numbers, rarely setting foot upon the shore, unless it be for a few hours of repose upon some outlying rock or bar, and probably during the breeding season in some secluded retreat. It is found 60 and 80 miles from land, singly and in pairs; and even females with their young may be seen drifting about at that distance. Patches of floating kelp are their favorite resting-places, and in still weather the female can be seen floating on her back, holding her offspring. Some hunters with well-developed ears or vivid imagination assert that the animal gives forth a crooning sound or lullaby, hushing the baby, as it were. During a very cold winter (in 1879-'80) some sea-otters came ashore in Cook's inlet.

In former times the Aleutian hunters prepared themselves for sea-otter expeditions by fasting, bathing, and other ceremonies. The sea-otter was believed to be possessed of a very strong aversion to the female sex, and consequently the hunter was obliged to separate himself from his wife for some time prior to his departure, and also to prepare the garments he was to wear, or at least to wash with his own hands such of his garments as had been made by women. On his return from a successful hunt the superstitious Aleut of former times would destroy the garments used during his expedition, and before entering his hut dress himself anew from head to foot in clothing prepared by his faithful spouse during his absence. The hunting garments were then thrown into the sea. One old man stated in explanation of this proceeding that the sea-otters would find the clothing and come to the conclusion that their late persecutor must be drowned, and that there was no further danger. With the spread of the Christian religion among the sea-otter hunters most of these superstitions ceremonies were abolished, but even at the present day the sea-otter hunter occupies a prominent position in the community and enjoys great social advantages. Anything he may want which is not in the possession of his own family will be at once supplied by his neighbors, and weeks and even months are spent in careful preparation of arms, canoes, and implements.

The mode of hunting the animal has not essentially changed since the earliest times. A few privileged white men located in the district of Unalaska employ fire-arms, but the great body of Aleutian hunters still retain the spear and in a few instances the bow and arrow. The sea-otter is always hunted by parties of from four to twenty bidarkas, each manned by two hunters. From their village the hunters proceed to some lonely coast near the hunting-ground, either in their canoes or by schooners and sloops belonging to the trading firms, a few women generally accompanying the party to do the housework in the camp. In former times, of course, this was not the case. The tents of the party are pitched in some spot not visible from the sea, and the hunters patiently settle down to await the first favorable day, only a smooth sea permitting the hunting of sea-otter with any prospect of success. In the inhospitable climate of Alaska weeks and months sometimes pass by before the patient hunters are enabled to try their skill. A weatherwise individual, here called "astronomer", generally accompanies each party, giving due notice of the approach of favorable weather and the exact time when it is best to set out, and few Aleuts are bold enough to begin a hunt without the sanction of this individual. At last the day arrives, and after a brief prayer the hunters embark fully equipped, and in the best of spirits exchange jokes and banter until the beach is left behind; then silence reigns, the peredovehik or leader assumes command, and at a signal from him the bidarkas start out in a semicircle from 50 to 100 yards distant from each other, each hunter anxiously scanning the surface of the water, at the same time having an eye upon the other canoes. The sea-otter comes up to the surface to breathe about once in every ten minutes, the smooth, glossy head remaining visible but a few seconds each time.

As soon as the hunter spies an otter he lifts his paddle as a signal and then points it in the direction taken by the animal, and the scattered bidarkas at once close in a wide circle around the spot indicated by the fortunate discoverer. If the animal comes up within this circle the hunters simply close in gradually, beating the water with their hands to prevent the escape of the quarry; but very often the wary animal has changed its direction after diving, and the whole fleet of canoes is obliged to change course frequently before the final circle is formed. As soon as the otter comes up within spear's-throw one of the hunters exerts his skill and lodges a spear-head in the animal, which immediately dives. An inflated bladder is attached to the shaft, preventing the otter from diving very deep. It soon comes up again, only to receive a number of other missiles, the intervals between attacks becoming shorter each time, until exhaustion forces the otter to remain on the surface and receive its death wound. The body of the animal is then taken into one of the bidarkas and the hunt continues if the weather is favorable. On the return of the party each animal killed is inspected by the chief in the presence of all the hunters and its ownership ascertained by the spear-head that caused the mortal wound, each weapon being duly marked. The man who first struck the otter receives from two to ten dollars from the owner. The skins of the slain animals are at once removed, labeled, and classified according to quality by the agents of the trading firms, and carefully stored for shipment. It frequently happens that a whole day passes by without a single sea-otter being sighted, but the Aleut hunters have a wonderful patience and do not leave a place once selected without killing some sea-otters, be the delay ever so long. There are instances where hunting parties have remained on barren islands for years, subsisting entirely on "algae" and mussels cast from the sea. On the principal sea-otter grounds of the present time, the island of Sannakh and the neighborhood of Belkovsky, the hunting parties seldom remain over four or five months without securing sea-otters in sufficient number to warrant their return. Single hunters have sold sea-otters to the value of \$800 as their share of such brief expeditions, but payment is not made until the return of the party to their home station.

As soon as the result of a day's hunt has been ascertained the chief or leader reminds the hunters of their duty toward the church, and with their unanimous consent some skin, generally of a small animal, is selected as a donation to the priest, all contributing to reimburse the owner. The schools also receive donations of this kind, and the skins thus designated are labeled accordingly and turned over to the trading firms, who place the cash value at the disposal of the priest. Rivalry in the business of purchasing sea-otter skins has induced the various firms to send agents with small assortments of goods to all the hunting-grounds, as an inducement to the members of parties to squander some of their earnings in advance.

The method of killing the sea-otter is virtually the same in all sections frequented by it.

The killing of fur-seals is accomplished entirely on land, and has been reduced almost to a science of the greatest dispatch and system. The able-bodied Aleuts now settled upon the two islands of Saint Paul and Saint George are, by the terms of the agreement between themselves and the lessees, the only individuals permitted to kill and skin the seals for the annual shipment as long as they are able to perform the labor efficiently within a given time. For this labor they are remunerated at the rate of 40 cents per animal. Life-long practice has made them expert in using their huge clubs and sharp skinning-knives, both implements being manufactured expressly for this use. These men are as a class proud of their accomplishments as sealers, and too proud to bemean themselves in doing any other kind of work. For all incidental labor, such as building, packing, loading and unloading vessels, etc., the lessees find it necessary to engage laborers from the Aleutian islands, these latter individuals being generally paid at the rate of one dollar per diem.

The work connected with the killing of the annual quota of fur-seals may be divided into two distinct features, the separation of the seals of a certain age and size from the main body and their removal to the killing-ground forming the preliminary movements; the final operation consisting of another selection among the select, and killing and skinning the same. The driving as well as the killing cannot be done in every kind of weather, a damp, cool, cloudy day being especially desirable for the purpose.

As it is the habit of the young male seals up to the age of four years to lie upon the ground back of the so-called rookeries or groups of families that line the sea-shore, the experienced natives manage to crawl in between the families and the "bachelors", as they were named by the Russians, and gradually drive them inland in divisions of from 2,000 to 3,000. It is unsafe to drive the seals more than five or six miles during any one day, as they easily become overheated and their skins are thereby injured. When night comes on the driving ceases, and sentries are posted around each division to prevent the animals from straying during the night, occasional whistling being sufficient to keep them together. In the morning, if the weather be favorable, the drive is continued until the killing-ground is reached, where the victims are allowed to rest over night under guard, and finally, as early as possible in the morning, the sealers appear with their clubs, when again small parties of 20 or 30 seals are separated from their fellows, surrounded by the sealers, and the slaughter begins. Even at this last moment another selection is made, and any animal appearing to the eye of the experienced Aleut to be either below or above the specified age is dismissed with a gentle tap of the club, and allowed to go on its way to the shore, rejoicing at its narrow escape. The men with clubs proceed from one group to the other, immediately followed by the men with knives, who stab each stunned seal to the heart to insure its immediate death. These men are in turn followed by the skinners, who with astonishing rapidity divest the carcasses of their valuable covering, leaving, however, the head and flippers intact. Only a few paces behind the skinners come carts drawn by mules, into which the skins are rapidly thrown

and carried away. The wives and daughters of the sealers linger around the rear of the death-dealing column, reaping a rich harvest of blubber which they carry away on their heads, the luscious oil dripping down their faces and over their garments.

The skins, yet warm from the body, are discharged into spacious salt-houses and salted down for the time being like fish in bins. This treatment is continued for some time, and after the application of heavy pressure they are finally tied into bundles of two each, securely strapped, and then shipped.

The process by which these unskillful, ill-smelling bundles are transformed into the beautiful fabrics of fashion is described briefly in a letter written by a leading furrier of New York, from which I extract the following:

When the skins are received by furriers in the salt the latter is washed off and the fat removed from the inside with a beaming-knife, great care being taken that no cuts or uneven places are made in the pelt. The skins are next thoroughly cleansed by being stretched upon beams with the fur side up, and then a careful removal of grease or other matter attached thereto. The next step in the proceeding is a stretching of pelts upon frames and drying the same over a moderate heat. After the drying process they are soaked in water and thoroughly washed with soap. After this the fur is dried again, the pelt being kept moist, and the operator pulls out the long hair with the assistance of a dull knife. The operation—a very delicate one—is repeated several times, until nothing but the soft fur remains. The skins are then dried again and dampened on the pelt side, and shaved until a fine, even surface is obtained. Then follows the slow and tedious process of working, drying, and softening the skins by treading them with bare feet in a hogshead, with fine hard-wood saw-dust to absorb the grease. In dyeing, the liquid dye is put on with a brush, carefully covering the points of the standing fur. The skin is then pulled so as to make the points touch each other for some little time, and partially dried. The dry dye is removed and another coat applied, and the same process is repeated a number of times. A few of the coats of dye are put on, heavily pressed down to the edge of the fur; from eight to twelve coats produce a good color. The skins are then washed again and cleansed with saw-dust. The English process is said not to include the washing after dyeing.

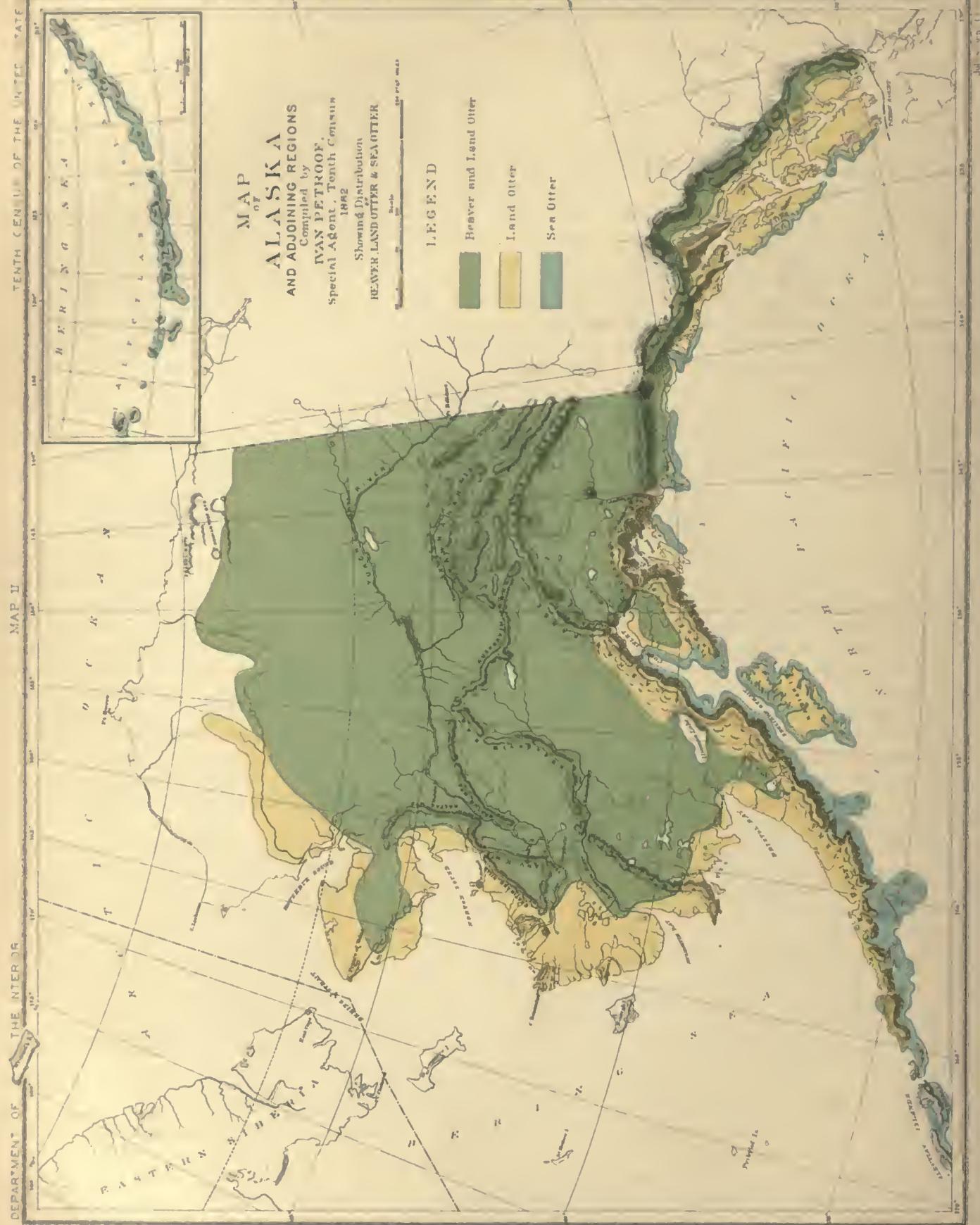
The manner in which the proceeds of the joint labor of all the sealers are divided among them is quite worthy of attention, and in its way solves to some extent the problem of communal labor. The introduction of this rather complicated system was founded upon measures adopted by the promyshleniks, or the companies of Siberia of the last century. As an example the division of proceeds on Saint Paul island alone in the year 1879 is presented: The sum total of joint earnings was first ascertained; next the number of claims upon the fund—that is, the families, individuals, and institutions to be supported—was definitely settled. Special donations were next in order, these consisting of gifts to three chiefs or superintendents of the labor of \$150 each, \$100 each to two men connected with church service, and one annual donation of \$450 to the parsonage of Oonalashka. The remainder was divided among the church of Saint Paul, the priest of that church, 64 actual laborers and heads of families, and 14 invalids and widows, the latter being divided into three classes according to their wants. The church, priest, and able-bodied men are entitled to what are called first-class shares in the proceeds, the others receiving second-, third-, and fourth-class shares respectively. The total number of participants in the distribution of earnings by shares in the year 1879 was 82, counting the church and priest at two shares each. The sum total of earnings was in that instance divided by 82, in order to ascertain the value of one first-class share. The value of a second-class share was ascertained by deducting 10 per cent. from the first-class share, and the same rule was followed as to the third and fourth classes. In the reduction of three classes of shares a sufficient sum is left to cover all the special gifts above mentioned. In the year referred to the division was as follows: The total earnings of sealers on Saint Paul island were \$32,153 40; first-class shares, 68, of \$410 75 each; second-class shares, 6, of \$369 67 each; third-class shares, 6, of \$328 60 each; and two fourth-class shares of \$287 52 each. The special gifts conferred by unanimous consent of the community, aggregating \$1,100, have already been mentioned above. The same rules are observed in dividing the earnings of sealers on the island of Saint George, where the each rarely exceeds 20,000 per annum and the value of shares is somewhat smaller.

No better plan could be devised by experienced political economists to provide in a just and equitable manner for all the members of an isolated community cut off from all the means of support but the one secured for them by the government.

It is evident that the shipments of both sea-otters and fur-seals have more than doubled since the transfer of the Russian colonies to the United States. An official statement, made in 1863, concerning the shipments of sea-otters from Sitka during the period of twenty years preceding, places the aggregate at 25,899, or an annual production of 1,295. At the present date the number approaches 6,000. The distribution of the sea-otter is somewhat changed, but I know of only one hunting-ground where the number secured annually was greater in the past than it is now; that is on the island of Attoo, which, during the twenty years mentioned, produced 2,421 sea-otter skins, or 121 per annum, against 14 or 16 now obtained on the island each year. In the district of Kadiak and the Shumagin islands the yield has been increased, while at the same time sea-otters have made their appearance in large numbers at the southern end of Cook's inlet, where they were nearly exterminated almost a century since.

The increase in seals does not extend to the Commander islands, still under Russian control.

Of land-furs the records now available are less satisfactory with regard to the past. We have, however, an official statement covering the same twenty years—from 1842 to 1862—in which skins of foxes of three kinds (black, cross, and red), and from all sources, are reported as numbering 77,847, or 3,892 per annum; those of the Arctic fox, 54,134, or 2,706 per annum; beaver, 157,484, or 7,874 per annum; land-otter, 70,473, or 3,523 per annum; marten, 12,882, or 644 per annum; bear, 1,893, or less than 100 per annum. That this official statement was far below the actual yield is made probable by the fact that at the present day, after forty years of hunting and trapping, the yield of land furs is greater by many thousands of each species. The only fur-bearing animal of



this class that has decreased in numbers in our times is the beaver; and this is not due to the effects of hunting or trapping, but to several seasons of extraordinary cold, during which the submarine entrances to the beaver huts were closed by ice and the animals starved inside.

The marten or sable, though inferior to the Siberian species, is quite valuable, but the supply is limited. Whether it ever existed in larger numbers is difficult to ascertain, because the Russian company did not ship them from the colonies, but gave or sold them to the higher classes of its employés. Under the present rule of permitting only natives of the soil to hunt and trap, the balance between supply and consumption seems to be well preserved. No complaints are heard of the extinction of any fur-bearing animals, with the one exception of the beaver. As the whims of fashion change the prices of certain kinds and qualities of furs, traders induce the natives to secure those kinds in preference to others, and thus discrepancies arise in the annual catch, but this makes no difference as to the total. The fact that game, such as moose and reindeer, has been killed off to a great extent in the regions furnishing the principal land-furs would lead us to expect that the natives, deprived of their natural food-supplies, would be compelled to purchase largely imported provisions of the traders, and hunt more actively to provide means for the purchase. As far as can be observed this is the case only with regard to flour, though they seem to spend now for food money which was formerly squandered in beads and gaudy clothing unsuited to their mode of life. If extinction of fur-bearing animals in the continental region of Alaska should take place in the future it will be due entirely to the constant drain from the Arctic shore, where the Eskimos are constantly exchanging furs for whisky and other intoxicating liquors, drawing largely upon furs obtained from their neighbors in the interior as far south as the Yukon, for which they receive no return but the means of stupefying themselves for days and weeks, and perhaps a breech-loading rifle, which becomes useless in their hands as soon as the fixed ammunition is expended. The fur-bearing animals on the immediate sea-coast are almost exterminated or of little value, but the equivalent return of supplies of alcohol must be obtained, and, as a consequence, a traffic with their southern neighbors is carried on by these people, on the principle of buying furs for a little whisky and selling them for a larger quantity, the evils of this system working in both directions.

THE DISTRIBUTION OF THE FUR-BEARING ANIMALS IN ALASKA.

THE FUR-SEAL (*Callorhinus ursinus*).—The only hauling- or breeding-grounds of the fur-seal known in Alaska are on the islands of Saint Paul and Saint George, with the addition perhaps of the adjoining otter island, where these animals occasionally haul up but do not breed. From early spring until late in the autumn fur-seals are met with in all portions of the north Pacific inclosed by the Alaska coast, from latitude $54^{\circ} 40'$ to Mount Saint Elias, and thence westward along Prince William sound, the east side of Kenai peninsula, and along the Aliaska peninsula and its continuation, the Aleutian chain of islands. In Bering sea the animal has not been observed to the northward of latitude 58° . In the spring of the year only fur-seals are found in large numbers in the vicinity of the strait of Fuca and along the coast of Vancouver and Queen Charlotte islands. During the time of the general migration to and from the breeding-grounds several of the passes through the Aleutian chain are crowded with adults in the spring and with young seals and yearlings in the late summer and autumn. The presence of large numbers of these animals in these selected waters and those of Prince William sound late in the season (in June and July) has often given rise to the supposition that some breeding-grounds must exist in those localities, but the most minute and persistent search has failed to sustain the supposition.

About 50 miles south of the Aleutian chain large numbers of seals are frequently seen during the summer, and for half a century rumors of the existence of breeding-grounds in that neighborhood were launched from time to time.

The Russian-American Company fitted out numerous exploring expeditions, but these were always unsuccessful. The last enterprise of the kind was undertaken by a former employé of the Russian company, under the auspices of the present lessees of the seal islands, on the schooner John Bright, in 1873, being the third expedition of the kind fitted out by the Alaska Commercial Company in two years. On this occasion indications of land, such as are accepted by all navigators, were not wanting in the waters included in the search. After a season of fruitless search the captain finally abandoned his undertaking, owing to the conclusion, however, that within a short distance southward from the Aleutian islands there existed banks sufficiently shallow to serve as feeding-grounds for the seals, which possibly visit them for that purpose even during the breeding-season, as a journey of 300 miles is but a brief excursion for these rapid swimmers in search of food.

All other expeditions in search of the supposed "winter home" of these seals have met with the same lack of success. The Pacific ocean and the Antarctic have been scoured by the sealers and by emissaries of trading firms, but at the present day the fact seems to be established that the fur-seals, after leaving their confined breeding-places, scatter over the broad Pacific to localities where extensive elevations of the bottom of the sea enable them to subsist upon fish until the instinct of reproduction calls them again from all directions to one common goal.

THE SEA-OTTER (*Enhydra marina*).—The sea-otter seems to exist chiefly on a line parallel with the Japanese current from the coast of Japan along the Kurile islands to the coast of Kamchatka, and thence westward along the Aleutian chain, the southern side of the Aliaska peninsula, the estuaries of Cook's inlet and Prince William sound, and thence eastward and southward along the Alaskan coast, the Alexander archipelago, British Columbia, Washington territory, and Oregon.

At the beginning of the present century large numbers of these animals were also found on the coast of California, from which they have now disappeared altogether; and on the coast of Oregon, Washington territory, and British Columbia they have decreased to such a degree that only at long intervals is the patient hunter rewarded with the prize of one of these valuable skins. On the west coast of Vancouver island, in the vicinity of Nootka sound, where Meares, Portlock, Dixon, and others of the earliest English northwest traders found thousands of sea-otter skins in the possession of chiefs, the animal has been almost exterminated, and there can be no doubt that had it not been for the protection afforded under the Russian monopoly for nearly three-fourths of a century, this animal would be extinct to-day in Alaskan waters. The Inuit tribes alone entered understandingly into the measures of protection introduced by the Russians. The Thlinket, on the other hand, a fierce and savage people, opposed to system and order or control of any kind, were the most active agents in the extermination of the animal. From the time they began to understand the value of sea-otter skins, from the eagerness with which the early English visitors purchased all they had, even mere scraps and rags, the Thlinket all along the coast, from the mouth of Copper river southward, hunted and slaughtered the sea-otter indiscriminately and in the most clumsy manner, frightening away as many as they killed. Had these tribes joined to their recklessness the same skill and patient persistence observed among the Eskimo and Aleut there would be no sea-otters on that coast to-day; but in their wooden canoes they can only hunt in fine weather, and at such times the sea-otter retires from the coast to a distance which no Thlinket would venture.

In the Russian possessions about the Kurile islands and the coast of Kamchatka but a few hundred sea-otters are now killed annually. At three different times during the existence of the Russian-American Company their agents on the Kurile islands and Kamchatka reported the sea-otter as extinct, and each time the animals appeared again after they had not been hunted for a few years. Along the Aleutian chain the sea-otters frequently change from one feeding-ground to another; for instance, for a long series of years the island of Attoo and several smaller surrounding islands furnished many hundreds of sea-otter skins every year, but for some unexplained reason a migration eastward took place, and at the present time from fourteen to twenty skins are all that the poverty-stricken inhabitants sell to the traders. The numerous islands between Attoo and Atkha are each visited in turn by the hunters about once in three years, and under such management the numbers of the animals appear to remain the same. The outlying reefs of Atkha, which once furnished the most abundant supply of these valuable skins, are now entirely deserted, and the inhabitants undertake long hunting-voyages to the westward under convoy of schooners belonging to the trading firms.

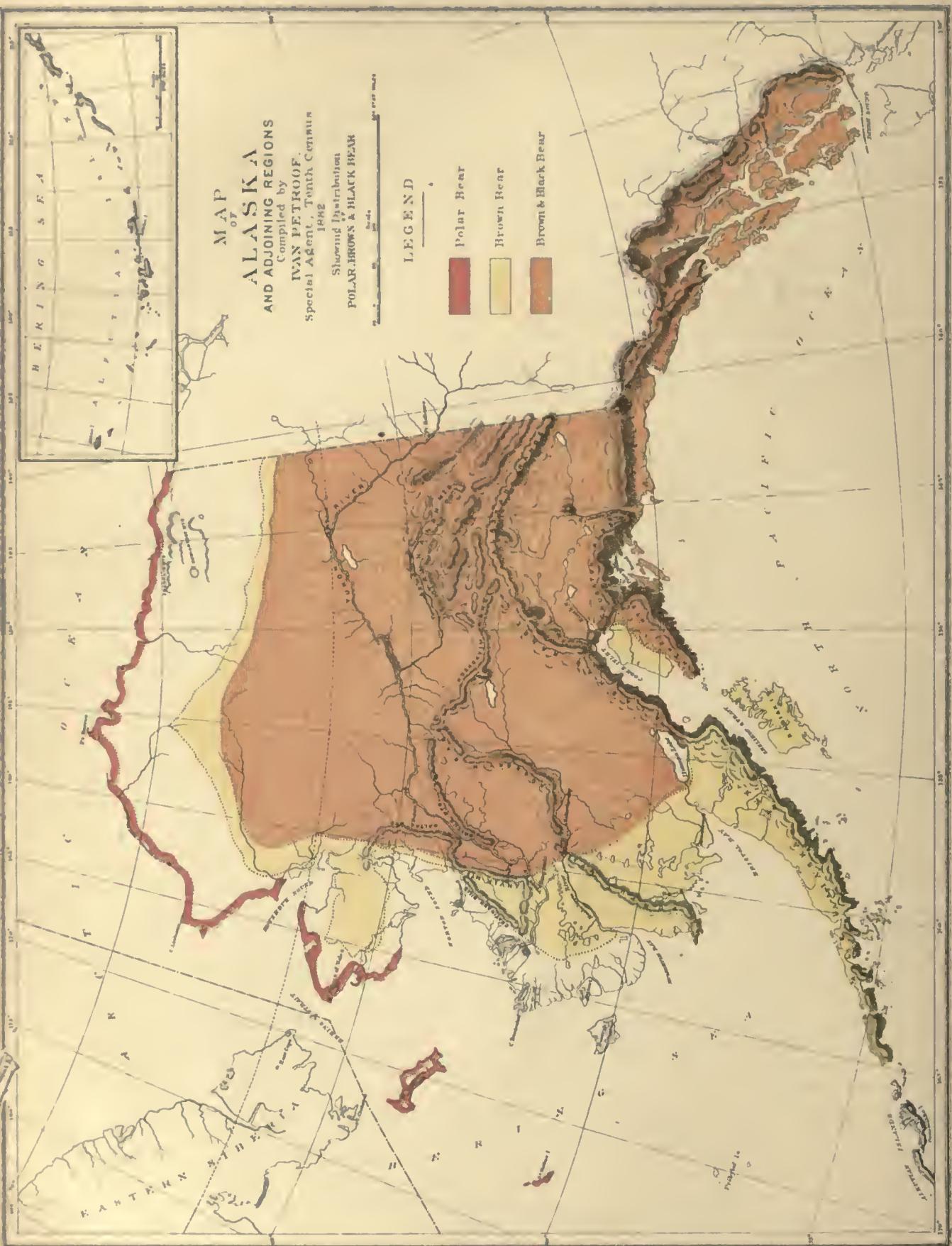
From the island of Ounimak eastward the sea-otter becomes more frequent until we find it in its greatest abundance in the district of Sannakh and Belkovsky. Here, within a radius of not more than 50 miles, over 2,000 sea-otters are seened every year by the fortunate hunters without any apparent decline in numbers. From this point in a northeasterly direction the coast of the Alaska peninsula is lined with hundreds of islands and reefs, affording ample facilities for shelter and refuge to the persecuted animal, and though it is hunted here recklessly by white and native hunters alike, using fire-arms in violation of existing regulations, no alarming decrease can be ascertained from statistics at hand. Still further northward, in the waters of the Kadiak archipelago and the southern half of Cook's inlet, and thence eastward to Prince William sound, sea-otters are found in less number than in the district described above, but still in comparative abundance, the annual yield being between 1,000 and 1,500 skins.

As far as it is possible for us to know, the only enemy of the sea-otter is man, with the exception, perhaps, of the so-called "killer-whale". We have reports of natives only in support of the last statement, but as this whale is known to make sad havoc among fur-seals there is no reason to doubt that they occasionally attack the somewhat larger sea-otter. Skins have come under my observation marked with scars produced evidently by the teeth of some large marine mammal.

The distribution of the sea-otter along the coast of Alaska, as indicated in the accompanying map, has not essentially changed within historic times. Certain localities have been abandoned by the animal altogether, others temporarily; but where Bering, Chirikof, and Steller, and subsequently the Russian promyshleniks found the sea-otter more than a century ago, we find it now, and the supply of such skins in the fur markets of the world is certainly as great now as at any time since the first indiscriminate slaughter prior to the establishment of the Russian monopoly; in fact it is apparently much greater.

THE LAND-OTTER (*Lutra canadensis*).—The land-otter is one of the most widely distributed fur-bearing animals in Alaska, ranking in this respect next to the common cross fox. The skin, however, is much more valuable, since of late it has been utilized for the manufacture of an imitation of seal-skin. The skin has always met with ready sale in Russia, where it is used extensively for collars and cuffs of the uniforms of army officers of the line, who cannot afford the more expensive sea-otter trimmings. The demand for it in former times was so great that the Russian-American Company, in leasing a strip of land to the Hudson Bay Company, was not only willing but anxious to accept payment in land-otter skins. The Chinese also have a liking for this fur.

The land-otter is found on the whole coast of Alaska, from the southern boundary to the northern shore of Norton sound. It also occurs on all the islands inside of these limits as far as Ounimak in the west and Nunivak in the north. Within the Arctic circle the land-otter is confined to the upper courses of rivers emptying into Kotzebue sound and the Arctic ocean, such as the Colville, the Kok, the Inland, and Selawik. It is found also



along the whole course of the Yukon as far as known, along the Kuskokvim, and all over the delta lying between the mouths of these rivers, in the valleys of the Togiak and the Nushegak, and in nearly all parts of the Aliaska peninsula and Oonimak island, as well as on the Kadiak archipelago, the shores of Cook's inlet, on the Kinik and Sushetno rivers emptying into the same, on Prince William sound, and on the Copper river. The traders report the land-otter also along the whole coast from Mount Saint Elias to the southern boundary, with the exception of the smaller islands.

THE BEAVER (*Castor fiber*).—The beaver was once one of the most important among the fur-bearing animals of continental Alaska, but both in supply and demand a great decline has taken place during the last half century. It would seem that the smaller demand would cause an increase in the supply, but this has not been the case. Throughout the whole interior region north of Cook's inlet and south of the Yukon river the beavers have frequently suffered from excessive and prolonged cold during the winter, the ice in rivers and ponds forming so rapidly and to such thickness that the animals found it impossible to keep open the approaches to their dwellings under water, and they died from starvation before the thaws of spring opened their prisons. The Indians of the Kinik and Tennenah rivers state that after an extraordinarily cold winter they have frequently found the putrefying carcasses of hundreds of beavers in their so-called lodges. Thousands of old beaver-dams all over the continental portion of Alaska also testify to the former abundance of the animal, which now is thinly scattered over the same ground. At nearly every trading-post throughout Alaska where beaver-skins are at all secured, hundreds are purchased now where thousands appear on former records.

The northern limit of the beaver seems to be but little to the southward of that of the land-otter—considerably above the Arctic circle—being identical with the limit of trees. Skins are obtained from the natives living on the northern tributaries of the Yukon river, which have passed into the hands of the latter from the headwaters of the Colville and other rivers emptying into the Arctic.

All the streams emptying into Kotzebue sound are still inhabited by the beaver, and it is found on the east shore of Norton sound, along the whole course of the Yukon and its tributaries, among all the lakes and streams of the Yukon and Kuskokvim deltas, in the lake and river systems of the Togiak and the Nushegak, about lake Ilyamna and the lakes and rivers of the Aliaska peninsula down to a line identical with that forming the northern boundary of the Aleutian tribe. On the shores of Cook's inlet and the rivers emptying into the same the beaver is still comparatively plentiful, especially in the vicinity of the large lakes occupying the central portion of the Kenai peninsula. Beaver-skins are also obtained from the natives occupying the headwaters of Copper river and the series of lakes connecting the river with the Kinik and the Sushetno rivers.

In the southeastern section of Alaska, west of Mount Saint Elias, traders report the existence of the beaver on streams and rivers of the mainland, but it is probable that most of the skins obtained in that vicinity come really from the British possessions, whence all these rivers flow.

In the past, when the Hudson Bay Company reigned supreme throughout the beaver country of northwestern America, the skins of these animals represented in trade the value of an English shilling each, and were used and accepted as common currency. Within the Russian possessions the value was always somewhat higher, and at the present time the price of a beaver-skin of average size in Alaska is from \$1.50 to \$2, according to weight.

The Indians of the interior and a few of the Eskimo tribes look upon the meat of the beaver as a great delicacy; it is a dish that is always set before honored guests, and is much used during festivities. The long incisors of the beaver form an important item in the domestic economy of the natives who hunt this animal, the extraordinary hardness of these teeth making it possible to use them in the manufacture of chisels, small adzes, and other tools used in the working of wood and bone. Under the rule of the Russian-American Company the exportation of eastorenii was quite extensive, but now that article meets with no demand outside of the Chinese market, the Celestials still looking upon it as a valuable part of their *materia medica*.

THE BROWN BEAR (*Ursus Richardsonii*).—The brown bear of Alaska, a huge, shaggy animal varying in length from 6 to 12 feet, is distributed over nearly every section of Alaska, but seems to prefer an open, swampy country to the timber. The northern limit of this animal is about latitude 67° north, where it is found on the headwaters of the rivers emptying into the Arctic, and occasionally on the streams emptying into Kotzebue sound and in the interior of the Kotzebue peninsula. Being an expert fisher, the brown bear frequents during the salmon season all the rivers emptying into Bering sea and the north Pacific and their tributaries as far as the fish will go, and at the end of the annual run of fish the animal retreats into the recesses of hills and tundra, where berries and small game are most plentiful. The banks of all the streams are lined on either side with the well-trodden trails of these huge animals, offering better facilities for the progress of the traveler than do the paths of men. The brown bear is the great road-maker of Alaska, and not only are the swampy plains intersected with paths made by him in all directions, leading generally to the easiest fording-places of streams and rivers, but the hills and ridges of mountains to the very top show the traces of this omnipresent traveler. He shows great judgment and local knowledge, for his road up the mountain is as safe to follow as is the most practicable route. In greatest numbers this animal is found in the region between the lower Kuskokvim, the Togiak, and the Nushegak rivers, and also on the Aliaska peninsula and the island of Oonimak. The island of Kadiak is full of this species of bear, but the largest specimens are shipped from the coast of Cook's inlet. The skin of a bear that had been killed in the vicinity of the Kenai mission during last summer (1880), which I measured, was 14 feet 2 inches in length. On the steep sides of the

volcanic range of mountains, on the west side of Cook's inlet, brown bears can be seen in herds of twenty or thirty. Their skins are not very valuable, and, owing to this fact and to the fierce disposition of the animals, they are not commonly hunted. All natives of Alaska respect them, and it is the universal custom of hunters to address a few complimentary remarks to the intended victims before attempting to kill them. Perhaps the skins of fully one-half of the brown bears killed throughout Alaska are retained by the natives for bedding and to hang before the entrances of houses in the place of doors. The smaller skins are tanned and cut up into straps and laces, and the natives of the interior utilize them for manufacturing sledge-fastenings and the net-work bottoms of snow-shoes, because this leather does not stretch when exposed to moisture as moose- and deer-skins do.

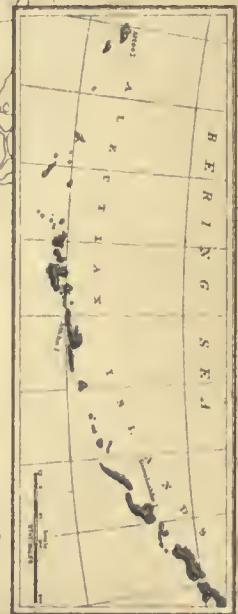
THE BLACK BEAR (*Ursus Americanus*).—The black bear of Alaska is widely distributed over the continental portion of the territory, but is generally confined to regions of timber and mountains; as far as known, it exists only on a few islands in Prince William sound and on Kauak island. The northern limit of the black bear extends, according to observations made by Mr. E. W. Nelson, even beyond that of his brown cousin. It is said to exist farther down the rivers emptying into the Arctic, and to be quite plentiful thence southward to the valley of the Yukon. The western limit of the region where the black bear is found is perhaps a line drawn from the Selawik river southeastward to Nulato, and thence across to the Kuskokwim river in the vicinity of Kalmakovsky. From the upper Nushgak many skins are obtained, and one trader reports black bear even west of this line, on the lower left bank of the Kuskokwim and on the Togiak peninsula, but as that region is not timbered the statement appears doubtful. From Bristol bay eastward the black bear is confined to the timbered regions about lake Ilyamna, but is more plentiful on the coast of Cook's inlet and in the interior of the Kenai peninsula. From the headwaters of the Yukon, Tennaah, Susheetno, Kinik, and Copper rivers many black-bear skins are brought down to the sea-coast, and from Prince William sound and eastward the mountains and forests harbor large numbers of these animals. These skins command high prices and are still increasing in value, but the animals are shy, and to hunt them requires much time and patience. The natives do not fear them in the least, and, in fact, it is considered the work of boys to kill them. Owing to its value, probably, the natives never use the black-bear skin for bedding. The glossiest and largest of these skins come from the Saint Elias alpine range and the vicinity of Prince William sound; but the black bear never attains the size of the brown variety.

THE RED FOX (*Vulpes fulvus*).—The only fur-bearing animal found in every section of Alaska is the red fox. From point Barrow to the southern boundary, and from the British line to the island of Attoo, this animal is ever present. It varies in size and quality of its fur from the finest Nushgak variety, equal to the high-priced Siberian fire-fox, down to the diminutive, yellow-tinged specimen that rambles furtively over the rocky islands of the Aleutian chain. Its color gives variety among the uniform snow-white robes of its polar cousin along the Arctic shore, and with the welcome persistency of the poor relation it minglest with the aristocratic black and silver foxes, always managing to deteriorate in course of time the blood and coating of the "first families". Mountain or valley, forest or swampy plain, all seem to be the same to him. The red fox seems perfectly indifferent in regard to his diet, fish, flesh, and fowl being equally to his taste, with such little *entremets* as shell-fish, mussels, and eggs of aquatic birds. He has an advantage over his fellows in the fact that his skin is cheap, and the natives do not eat his flesh except as a last resort in times of famine. They hunt or trap the red fox only when nothing else can be obtained; the interior tribes, however, make winter garments of their skins.

Being an inveterate and intrepid traveler the red fox is not above making an occasional sea-voyage on the ice, which explains his presence on all the islands of the Aleutian chain, the Shumagin group, and even on Saint Lawrence and the Pribylaf islands, over a hundred miles from any other land. It is a common practice among both Inuit and Indian tribes in the north to make household pets of young foxes whenever they can be secured alive. The average price of red-fox skins throughout the country is about \$1.

THE BLACK OR SILVER FOX (*Vulpes fulvus*, var. *argentatus*) AND THE CROSS FOX (*Vulpes fulvus*, var. *decessatus*).—The king among the various tribes of the *vulpes* family is the black or silver fox. He is found in his prime in the mountain fastnesses of the interior and on the headwaters of the larger rivers. Here he appears of large size, with long, soft, silky fur, varying in color from a silver tint to deep jet-black, the latter being the most rare and highly valued. These two qualities are found principally in the mountains on the boundary between southeastern Alaska and British Columbia, in the country of the Chilkats and the Takoos, on the upper Copper river, the Kenai peninsula, and on the Susheetno and Kinik, the upper Yukon, Tennaah, and Kuskokwim rivers. In the last-named regions the traders pay from \$10 to \$15 for each skin, but in southeastern Alaska, where competition is more fierce, as much as \$40 or \$50 in coin are frequently paid for a single skin. Along the Yukon and its northern tributaries the black fox of an inferior quality is found almost on the sea-coast and on the shores of Norton sound and in the interior of Kotzebue peninsula. The animal is also reported to exist on the headwaters of the Colville river up to the sixty-eighth degree of latitude. Black foxes are quite plentiful on Kadiak island; and they occur on the Shumagin group, Oonimak island, and on most of the Aleutian islands as far as Atka, but to many of these points they have been imported through the agency of man. On the timberless highlands of the far west the fur of these animals seems to deteriorate in quality.

Another species of the fox family is generally found with the silver fox, forming, in fact, the connecting link between the red plebeian and the black aristocrat. This is the cross fox, partaking of the distinguishing qualities of both the red and black, evidently the result of unrestrained intermixture. The quality and the color of the fur



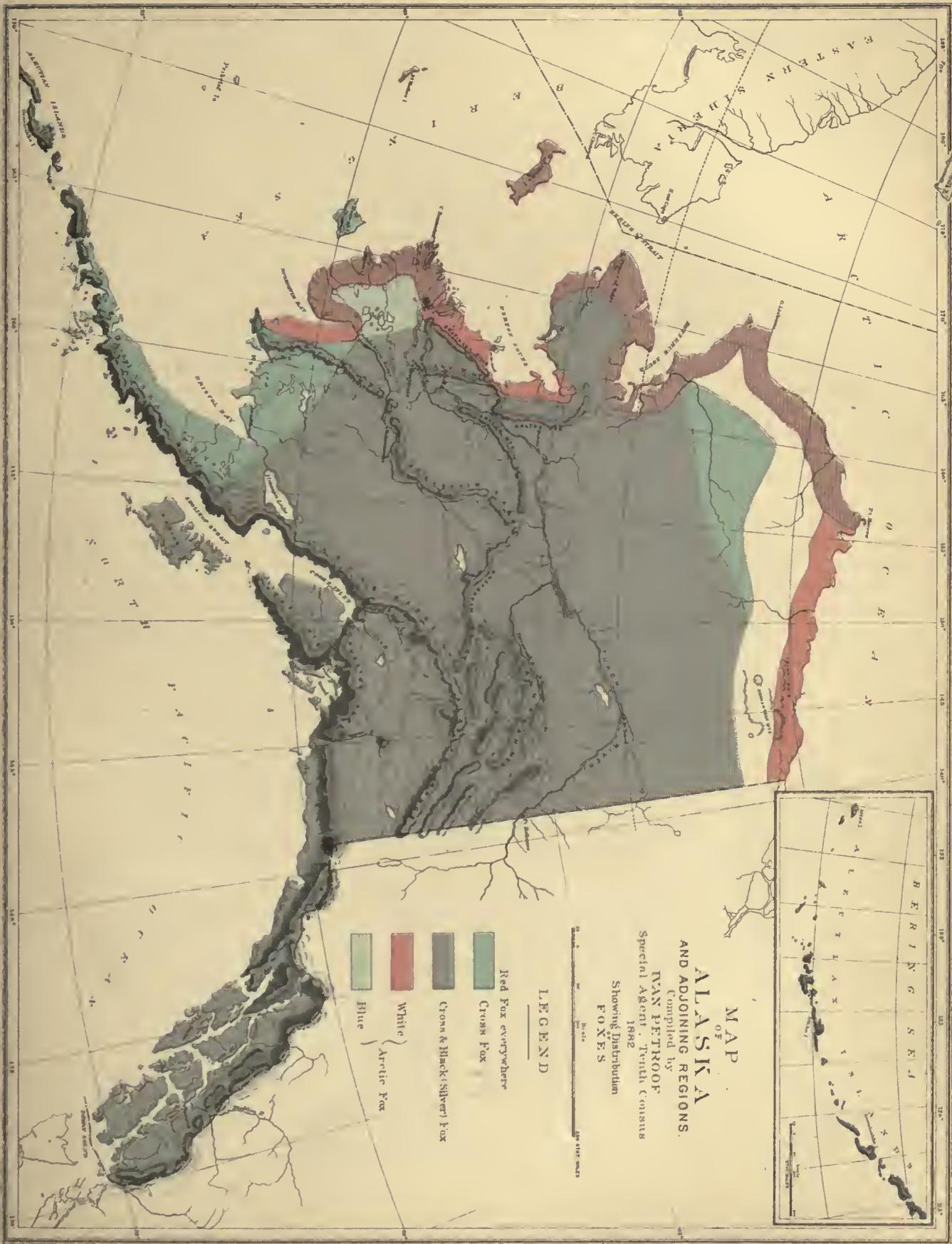
MAP OF ALASKA AND ADJOINING REGIONS.

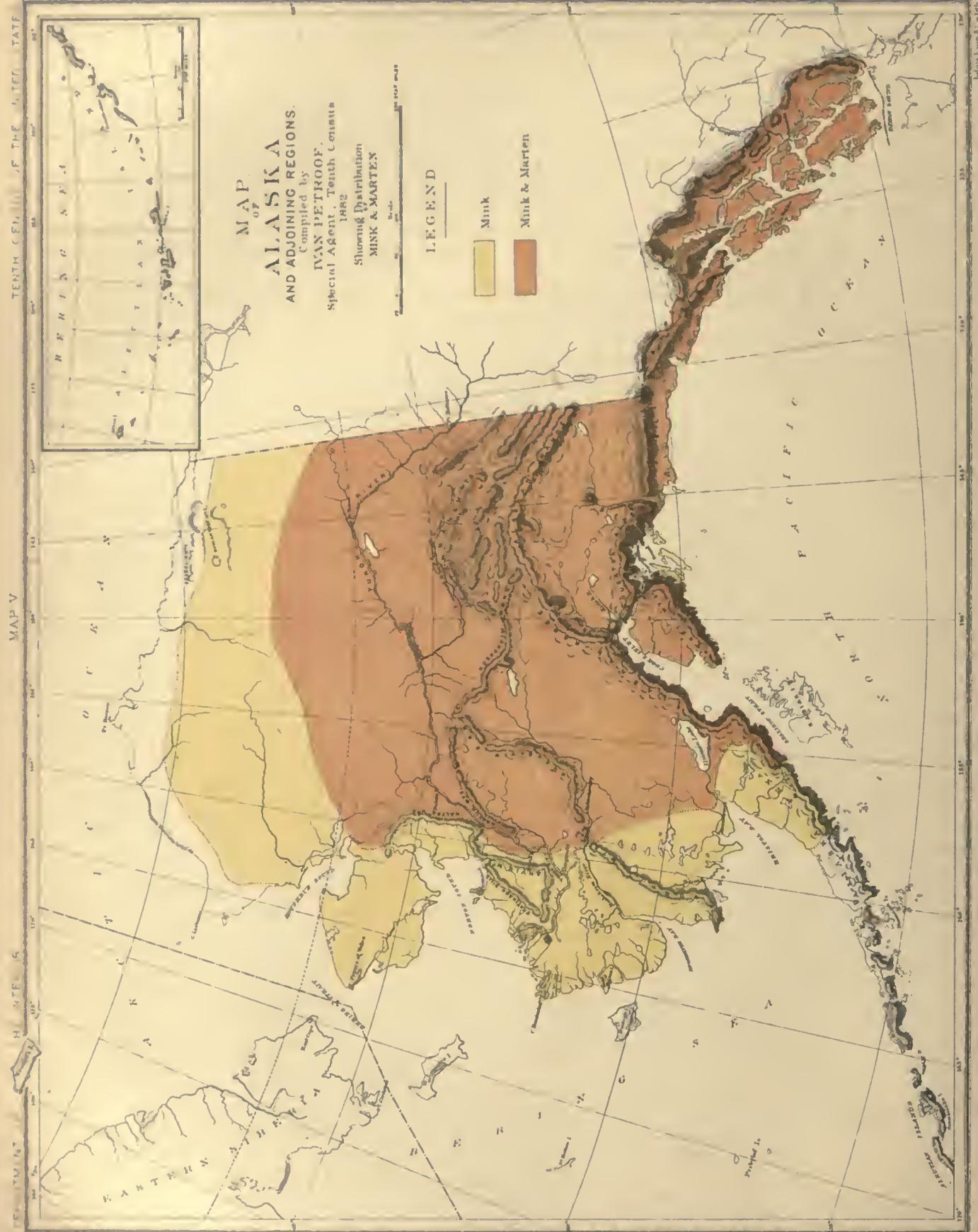
Compiled by
IVAN PETROFF
Special Agent, Tenth Census
Showing Distribution
FOXES

1882
Scale
100 miles
100 miles

LEGEND

- Red Fox everywhere
- Cross Fox
- Cross & Black (Silver) Fox
- White
- Blue Arctic Fox





of the cross fox come much nearer those of the red, and the skin of the former exceeds that of the latter but little in value—from \$2 to \$3 being paid for the best of them. While the distribution of the cross fox is naturally almost identical with that of the silver variety, the animal is found farther westward on the Aleutian islands, and is more frequent on the Aliaska peninsula, though on the islands of Prince William sound and on Kaiak island both the black and cross varieties exist.

The skins of silver foxes form the most important element in the trade of the whole Yukon basin, being almost the only high-priced skins found in that vicinity, but they are by no means numerous. The only section of Alaska where these animals are of the best quality and in large numbers at the same time is in the mountains about the Chilkhat and Takoo rivers, and there the reckless competition leaves but little margin for profit.

THE ARCTIC FOX (*Vulpes lagopus*—blue and white).—Of the Arctic fox we find in Alaska two varieties—one white and the other a bluish gray, commonly called “blue fox” by the traders. The white fox is found along the coast of continental Alaska from the mouth of the Kuskokvim northward to point Barrow and the eastern boundary. Its fur is of a snowy white, especially in the young, and both soft and long, but, owing to the lack of durability, it does not command a high price in the market.

The animal is very numerous northward of Norton sound, and not at all shy. Natives and travelers alike report instances of the fearlessness with which these foxes enter their camps, and even dwellings, in search of food or out of mere curiosity. A large portion of the skins secured by Eskimo and other natives are used by themselves for trimming their garments, and the remainder falls chiefly into the hands of whalers and whisky-smugglers, so that it is impossible to obtain accurate figures as to the annual catch. They may be called omnivorous, and they refuse nothing that will fill their stomachs. I observed one sleek and apparently well-fed specimen which devoured nearly the whole of a large salmon, and afterward worried down with considerable difficulty a thick leather strap with a heavy buckle attached to it. In the depth of winter the natives find it unsafe to leave any article of clothing, dog-harness, or boat material within their reach.

The blue fox exists now on several of the Aleutian islands, where it was found by the first discoverers in 1741. The animal is also found on the Pribylof islands, and here, where it has been possible to protect the species against intermixture with other and inferior foxes, the skins are of the finest quality, commanding a high price in the market. Traders report the existence of the blue fox to a limited extent in the vicinity of Oogashik, on the Aliaska peninsula, and also on the lower Kuskokvims; and it occurs also on the delta between the mouths of the Yukon and the Kuskokvims. Captain Hooper, of the revenue marine, who commanded the United States steamer Corwin during two successive cruises in the Arctic, reports that he saw blue foxes at cape Espenberg, Elephant point, Hotham inlet, point Hope, point Belcher, and point Barrow. The same gentleman also states that he “found the blue fox much more plentiful on the Siberian than on the American coast, and that all the blue foxes in the far north are so inferior to those on the islands of Bering sea as to suggest the possibility of their being a different species”. Even on the Arctic coast Captain Hooper saw blue foxes, taken at the same time and place, differing very much in the color and quality of the fur. On the Pribylof islands from 1,000 to 1,500 of the best quality of blue-fox skins are annually shipped, and several hundred of a little inferior quality from Attoo and Atkha islands, but it is impossible to ascertain the quantity obtained along the Arctic coast by whalers and illiterate traders.

THE MINK (*Putorius rison*).—The Alaska mink is distributed almost as widely as the red fox, but does not extend to the islands. It is most plentiful in the vast tundras or mossy marshes of the lower Yukon, Kuskokvims, Togiak, and Nushegak basins. The skin is of very little value; the Russian-American Company did not purchase it at all, and even now the trade in this article is confined chiefly to the natives, who manufacture it into garments or use it for trimming. No more than 10,000 or 15,000 of these small skins are exported annually. The northern limit of the mink is but little south of the Arctic coast, and from thence southward it is found everywhere throughout the continent until its southern and western limits are reached on the Aliaska peninsula on a line between cape Stroganof and Sutkhum island. The only islands on which minks are found to exist are those in Prince William sound and perhaps some of those in the Alexander archipelago. No skins of this kind shipped from any portion of Alaska equal in quality or value those of British Columbia, Washington territory, and Oregon; the traders simply buying them for the sake of accommodating their customers. The region about Togiak river and lakes, which furnishes scarcely any other fur than mink, has for that reason been entirely neglected by traders. Until a year ago no white man had penetrated into the recesses of the tundras, and the inhabitants, having no intercourse with civilized men, are still in their primitive condition of barbarism. The natives living on the Yukon and Kuskokvims deltas are called “mink people” in derision by their neighbors—a term equivalent to beggar.

THE MARTEN (*Mustela americanus*).—The limits within which the marten is found throughout Alaska are almost identical with those of standing timber. The animal is found occasionally as far north as latitude 68°, and inhabits the valleys of the Yukon, Kuskokvims, and Nushegak rivers from the headwaters down as far as timber exists, on the wooded mountain ranges of Cook's inlet and the Kenai peninsula. On the Chugach alps, the Copper River range, and the Saint Elias alps martens are plentiful and of the finest quality. Very fine skins of this kind are also purchased by the traders in southeastern Alaska; a portion of these probably being obtained from the British possessions. The Alaskan marten or sable is inferior to the Siberian fur of that name (“sable” is simply a corruption of the Russian word for marten, “sobol”, and is by no means a distinct animal). The Russian-American Company considered the Alaska sable of so little value that they did not export it at all from the colonies, but sold

the whole catch to officers and employés of the company. The price set upon these skins under those circumstances was small, indeed, being only ten cents each. After the transfer of the territory a demand for them arose, and in a few years of competition raised the price to \$4, \$5, and even \$6, much to the delight of the astonished natives; but the inferiority of the article soon made itself felt, and reaction set in until at the present day the price of marten-skins in northwestern Alaska does not exceed \$1 50, though in the southeastern section excessive competition still keeps up a higher figure.

A few more fur-bearing animals existing in Alaska may be mentioned, but they are not of sufficient importance to deserve more than a passing notice. The polar bear is found only on the Arctic coast, where ice in large bodies exists, and with the moving ice-fields he enters and leaves the waters of Bering sea. The number of skins annually secured forms but a very small item in the bulk of trade.

The lynx is found only in the wooded mountains of the interior on the Kenai peninsula and the Saint Elias range of mountains, the skins being used chiefly for carriage robes and trimming, but the fur is not durable.

Wolves, both gray and white, are found, but are rarely killed.

Musk-rats exist all over Alaska, but the skins are at most valueless and but few are shipped away.

Rabbits and marmots are killed only for their flesh, and occasionally the natives use the skins of the latter for the garments of the poor.

Wolverines are rarely exported, as they find a ready market among the inhabitants of the coast region of the Yukon and Kuskokwim divisions, who prefer this shaggy piebald fur to any other trimming for their garments.

EXPORTS OF FURS FROM ALASKA.

The first authentic list of fur shipments from Russian America was compiled at the beginning of the present century by Lieutenant Vassili Berg, of the Russian navy, who having access to all the archives of Petropavlovsk, Nishnekamchatsk, Bolshere茨k, and Okhotsk, included in his list all the importations from America from 1745 to 1797, with the exception of one cargo, containing nearly 4,000 sea-otter skins (the ship Vladimir, Captain Zaikof, in 1779). With the year 1797 the systematic operations of the Russian-American Company began, though their charter was not promulgated until a year or two later, and from that time forth official tabulated statements of furs shipped from the colonies were published from time to time. Other tables can be found in the works of various authors and travelers, but it is safe to state that, generally speaking, the totals thus furnished were below the actual yield of furs. These tables, furthermore, do not include the large shipments of sea-otter furs from the Alexander archipelago by American and English traders at the end of the last and the beginning of the present century, aggregating at least 20,000 or 30,000 skins. The transactions of Baranof, the first chief manager of the Russian-American Company, who paid for many ships' cargoes of provisions and trading-goods in fur-seal skins, were also ignored, and no account was kept of losses by the frequent shipwrecks and through carelessness of subordinate employés. Thus, in one instance, the captain of the ship Nadaishda, in 1805, was obliged to throw overboard 30,000 fur-seal and several hundred sea-otter skins, which were found to have reached an advanced stage of putrefaction in the hold of the vessel. The naturalist, Laugsdorff, who accompanied Lissiansky in his voyage around the world, learned from the sealers stationed on Saint Paul island that they had killed at least 30,000 fur-seals for their blubber only, the skins having been thrown into the sea for lack of time, hands, and fuel to cure them.

The incompleteness of the official Russian returns is easily demonstrated by comparison. One of these reports, covering the period from 1821 to 1842, gives the total shipments of furs as follows: Of sea-otter 25,416, or an annual average of 1,210; of fur-seal 458,502, or an annual average of 21,833; and of beaver 162,034, or an annual average of 7,716. Another partial report, yet also official, covers seven years of the same period, but shows results quite different. The annual average computed from the latter would be 1,407 of sea-otter, 18,880 fur-seal, and 5,711 beaver. The average annual yield in these furs, as computed from the company's official returns for the next twenty years, from 1842 to 1862, was 1,294 sea-otter, 18,644 fur-seal, and 7,874 beaver.

Large quantities of furs formerly found their way from the lower Yukon river and Norton and Kotzebue sounds to Siberia, through the hands of Chukchee and Malemute traders, who obtained trading-goods from Siberian merchants on the Anadyr and Indigirka rivers. These Alaskan furs were, of course, not included in any estimate, nor can I now give the number of skins purchased annually along the Arctic coast by the illegitimate traders who carry rum and breech-loading arms from the Hawaiian islands and spread ruin and destruction along these ice-bound shores. From the persistency with which these men continue to assume the risks of this unlawful traffic it must be concluded that both its volume and profit are large.

From southeastern Alaska, also, large numbers of furs are carried into British Columbia, of which no record can be obtained, both natives and whites being there engaged in smuggling them across the frontier. All this goes to show that all returns of Alaska's yield of furs always have been and necessarily must be below rather than above the reality.

The annexed tabular exhibit of fur shipments from Alaska since its first invasion by Siberian fur-traders has been compiled from records found in the archives of the Russian-American Company, from Russian official reports and other publications, and from the books of the San Francisco custom-house, supplemented by statements furnished by the few firms engaged in the Alaskan trade. This table shows strikingly the extraordinary increase

in the number of furs purchased annually since the transfer of Alaska to the United States. This discrepancy may, however, be only apparent to a certain extent, and could probably be much reduced were the means at hand of ascertaining the reliability of Russian returns. The officials of the Russian-American Company were disposed to conceal the actual extent of their transactions, as the company, during the later period of its existence, was constantly striving to obtain a reduction of or relief from the vast expenditure (for administrative and protective purposes) imposed upon it by the imperial charter. Another factor in the deficiency of returns may be found in the dishonesty of subordinate employés of the Russian company, who filled their own pockets at the expense of the shareholders. It was, however, the accepted policy of the managers of the corporation to keep the wants of the natives within the narrowest possible limits, and thereby to reduce as far as practicable the quantity of merchandise required for the colonial trade, which had to be shipped around the world at an enormous expense. Since the transfer of the country, on the other hand, and since the breaking up of the monopoly, the rival traders have vied with each other in dazzling the eyes of fortunate hunters with a lavish display of costly articles of luxury and delicacies for the palate, exciting them to the utmost exertion in the pursuit of fur-bearing animals.

SUMMARY OF FURS SHIPPED FROM RUSSIAN AMERICA AND ALASKA FROM 1745 TO 1880.

By whom shipped.	Sea-otter.	Surreal.	Land-otter.	Beaver.	FOX.				BEAR.		Mink.	Marten.	Muskrat.	Wolverine.	Lynx.	Wolf.					
					Black.	Cross.	Red.	Arctic.		Black.	Brown.										
								Blue.	White.												
I.—UNDER RUSSIAN RULE.																					
Siberian traders, from 1745 to 1797.	96,047	417,758	1,679	.....	10,421	15,147	14,961	62,361	.....	.....	.....	.....	.....	.....	.....	.....
Shelikhof company, from 1766 to 1707.	15,647	139,268	3,300	428	4,625	5,292	5,704	600	.....	.....	.....	200	.....	.....	.....	.....	
Russian-American Company, from 1798 to 1821.	86,644	1,767,340	17,768	56,001	15,112	24,533	33,456	45,904	5,130	.....	2,650	5,315	17,921	.....	1,234	1,819			
Russian-American Company, from 1821 to 1842.	25,416	458,502	29,412	102,084	17,013	20,402	45,047	55,714	13,638	.....	5,335	15,481	15,666	4,491	1,564	4,253				
Russian-American Company, from 1842 to 1862.	25,890	372,804	170,473	157,484	21,212	23,102	33,533	32,130	22,004	.....	1,893	12,701	13,682	6,570	10	6,927				
Russian-American Company, from 1862 to 1867.	11,137	108,718	21,816	37,409	14,310	7,942	12,310	8,082	5,119	.....	590	690	618	3,180	78	4,012				
Total Russian shipments.	260,790	3,334,478	244,538	413,356	83,568	102,410	147,917	204,791	45,891	.....	10,488	34,217	48,387	14,241	2,880	17,011				
II.—SINCE PURCHASE BY THE UNITED STATES.																					
By American traders, from 1867 to 1871.	12,208	338,965	6,307	17,041	2,310	0,214	31,714	4,410	4,312	121	1,910	32,100	24,311	17,908	2,412	180					
By American traders, from 1871 to 1880.	40,283	938,368	18,964	41,217	6,992	19,410	82,019	7,508	11,492	819	5,207	71,213	81,609	50,322	6,312	421					
Total American shipments.	52,491	1,277,333	25,331	58,258	0,362	23,624	114,033	11,927	15,804	940	7,117	103,313	105,920	68,230	8,724	601					
Grand total.....	313,281	4,631,811	269,869	471,614	92,805	128,034	262,550	210,718	61,605	940	17,605	137,530	154,307	82,471	2,886	25,735					
Total.....																					

With the aid of the above table a computation may be made as to the average earnings of the native hunter in disposing of his furs to the traders. The returns from the southeastern division are incomplete and partly inaccessible, and therefore the calculation is confined to the people living west of the one hundred and forty-first meridian.

During the ten years from 1870 to 1880 the purchases of furs by traders from natives aggregated—

40,283 sea-otter, at \$60, worth.....	\$2,416,980 00
18,964 land-otter, at \$2 50, worth	47,410 00
41,217 beaver, at \$2 50, worth.....	103,042 50
6,992 black fox, at \$15, worth.....	104,880 00
19,410 cross fox, at \$2 50, worth.....	48,525 00
82,019 red fox, at \$1, worth	82,919 00
7,508 blue fox, at \$2, worth.....	15,016 00
11,492 white fox, at \$1, worth.....	11,492 00
819 black bear, at \$3, worth.....	2,457 00
5,207 brown bear, at \$1 50, worth	7,810 50
71,213 mink, at 20 cents, worth	14,242 60
81,609 marten, at \$2, worth	163,218 00
50,322 musk-rat, at 5 cents, worth	2,516 10
6,312 lynx, at \$2, worth	12,624 00
421 wolf, at \$1 50, worth	631 50
Total.....	3,033,764 20

Average for one year, \$303,376 42, which sum divided between 3,000 families would give each an annual income of about \$100 from this source. The earnings of the Arctic Inuit are not included in this calculation, their furs not appearing in the above list. Another exception are the inhabitants of the Pribilof or fur-seal islands, who divide over \$40,000 every year among less than 100 families. It is also necessary to state that about 400 families divide the proceeds of the whole sea-otter catch, amounting to from \$250,000 to \$300,000 per annum.

The official report of State Councillor Kostlivtzof, who was appointed in 1861 to investigate the affairs of the Russian-American Company, contains a table exhibiting the purchases of furs from natives of Alaska during a period of nineteen years, from 1842 to 1860, inclusive. This table is arranged by districts and stations, and has been transcribed in full from the Russian original so far as it confines itself to the limits of the present Alaska. The operations of the Russian-American Company embraced also a few localities not included in the transfer of territory from Russia to the United States.

SUMMARY OF FURS PURCHASED BY THE RUSSIAN-AMERICAN COMPANY IN ALASKA FROM 1842 TO 1860.

ALASKA: ITS POPULATION, INDUSTRIES, AND RESOURCES.

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SUMMARY OF FURS PURCHASED BY THE RUSSIAN-AMERICAN COMPANY IN ALASKA FROM 1842 TO 1860—Continued.

SUMMARY OF FURS PURCHASED BY THE RUSSIAN-AMERICAN COMPANY IN ALASKA FROM 1842 TO 1860—Continued.

Year.	Where purchased—station or district.	Sea-otter.	Pur-seal.	Land-otter.	Beaver.	Fox.	Arctic fox.	Bear.	Mink.	Marten.	Musk-rat.	Lynx.	Wolver-ine.	Wolf.
1842	Atkha	91				34	243							
	Attoo	123					204							
	Saint Paul Island		6,225				645							
	Saint George Island		500				1,477							
	Kalmakovsky			54	1,732	62						11		
	Saint Michael			110	1,720	630		77	5		40	1,153	24	
	Total	880	6,725	704	6,701	4,314	2,730	70	6	573	1,152	49	80	5
1843	Sitka	1			70				2					
	Kadiak	282		248	6,170	589		75	51	232	1,146	5	74	0
	Ounga	242			87		517							
	Oonalashka	299			3		1,167							
	Atkha	4				235	185							
	Attoo	193					888							
	Saint Paul Island		10,034				641							
	Saint George Island		2,001				1,238							
	Kalmakovsky			48	2,640	163	113							
	Saint Michael			250	3,174	454	30	3	70	122	568	15		
	Total	1,021	18,035	636	12,072	3,175	2,505	80	121	354	1,714	20	74	0
1844	Sitka	1			23					30	21			
	Kadiak	390	1	438	654	1,534		22	8	238	167	3	46	1
	Ounga				1		721							
	Oonalashka	268					125	193						
	Atkha	9												
	Attoo	74												
	Saint Paul Island		24,146				624							
	Saint George Island		2,000				1,291							
	Kalmakovsky			42	1,472	105						1		
	Saint Michael			442	3,855	288	4	3	1	234		10		
	Total	742	26,147	923	6,004	2,773	2,112	25	39	513	167	14	46	1
1845	Sitka	3		2	9									
	Kallik	296		253	6,837	735		171	165	990	1,030	43	143	0
	Ounga	673			176		646						1	
	Oonalashka	338			2		820							
	Atkha	36												
	Attoo													
	Saint Paul Island		6,584											
	Saint George Island		2,001				1,123							
	Kalmakovsky			67	965	12						3		
	Saint Michael			347	1,594	470	36	2	33	502	235	4		
	Total	1,340	8,585	847	0,405	2,683	1,150	173	198	1,402	1,285	50	144	6
1846	Sitka				15									
	Kadiak	251		506	2,176	1,015		59	3	886		70	39	
	Ounga	103		64		138								
	Oonalashka	215				344								
	Atkha	86				71	159							
	Attoo	325					280							
	Saint Paul Island		20,550				514							
	Saint George Island		8,000				1,145							
	Kalmakovsky			88	1,161	260	99	16		450		10		
	Saint Michael			248	1,207	673	138	19	104	390	220	26		
	Total	1,070	23,550	906	4,550	2,501	2,335	94	107	1,732	220	112	39	
1847	Sitka													
	Kadiak	331		519	4,562	1,056		97	101	857	2,287	174	70	1
	Ounga	273		40		290								
	Oonalashka	403				341								
	Atkha	3				11	83							
	Attoo	176					180							
	Saint Paul Island		18,082				1,417							
	Saint George Island		3,000				1,198							
	Kalmakovsky													
	Saint Michael			375	2,683	1,050	159			1,387	52	33	52	
	Total	1,186	21,082	943	7,245	3,057	2,987	97	101	2,244	2,339	207	122	1

SUMMARY OF FURS PURCHASED BY THE RUSSIAN-AMERICAN COMPANY IN ALASKA FROM 1842 TO 1860—Continued.

Year.	Where purchased—station or district.	Sea-otter.	Fnr-seal.	Land-otter.	Beaver.	Fox.	Arctic fox.	Bear.	Mink.	Marten.	Musk-rat.	Lynx.	Wolverine.	Wolf.
1858	Sitka.....													?
	Kadiak.....	169	.....	442	3,120	1,364	17	76	42	1,002	2,880	208	73	4
	Ounga.....	274	.....	51	.....	240								
	Oonalashka.....	418	.....	7	.....	1,102								
	Atkha.....	32	.....			223	228							
	Attoo.....	249	.....				94							
	Saint Paul island.....		29,810	.....			558							
	Saint George Island.....		3,000	.....			1,555				*			
	Kalmakovsky.....			95	1,280	128	8	7	352	.....	95	.....	
	Saint Michael.....			286	1,449	506	150	24	1,394	69	53	.....	
	Total.....	1,142	32,810	881	5,849	3,563	2,610	107	42	2,748	2,949	356	73	4
1859	Sitka.....					32								
	Kadiak.....	491	.....	557	3,178	1,420		81	41	675	1,197	94	56	1
	Ounga.....	359	.....	44	.....	250								
	Oonalashka.....	443	.....			1,005								
	Atkha.....	106	.....			195	125							
	Attoo.....	279	.....				5							
	Saint Paul island.....		19,000	.....			019							
	Saint George Island.....		3,000	.....			1,296							
	Kalmakovsky.....			103	1,717	757	63	10	340	.....	52	.....	
	Saint Michael.....			333	1,982	995	267	37	1,940	140	32	1	.....
	Total.....	1,678	22,000	1,037	6,900	4,622	2,375	133	63	2,967	1,341	178	57	1
1860	Sitka.....				3	88	1	11	39	7	0			
	Kadiak.....	396	.....	421	5,413	1,988	12	20	20	527	1,184	30	68	
	Ounga.....	357	.....	63	.....	305								
	Oonalashka.....	478	.....	6	.....	870								
	Atkha.....	49	.....			42	245							
	Attoo.....	259	.....				59							
	Saint Paul Island.....		18,590	.....			625							
	Saint George Island.....		3,000	.....			911							
	Kalmakovsky.....			79	969	398	37	10	950	.....	9	.....	
	Saint Michael.....			313	1,950	895	54	40	1,530	.....	28	.....	
	Total.....	1,539	21,590	885	8,420	4,490	1,943	93	59	3,020	1,190	73	68	.....

RECAPITULATION.

Years.	Sea-otter.	Fnr-seal.	Land-otter.	Beaver.	Fox.	Arctic fox.	Bear.	Mink.	Marten.	Musk-rat.	Lynx.	Wolverine.	Wolf.
1842	806	10,172	1,478	8,522	5,527	2,545	304	741	240	3,578	150	40	11
1843	1,054	12,171	4,608	9,924	4,006	3,302	222	102	992	80	144	10	11
1844	926	12,680	1,214	9,051	3,356	3,021	70	68	625	0	35	67	9
1845	822	13,637	1,358	8,085	3,708	1,869	127	78	985	145	100	71	17
1846	1,210	15,070	984	10,676	2,788	3,866	80	160	1,868	.....	102	111	8
1847	980	17,703	824	9,458	3,444	2,549	65	101	1,630	152	311	60	2
1848	1,035	14,650	762	10,290	3,857	2,176	136	148	1,122	550	323	22	4
1849	1,186	21,452	1,054	8,937	3,900	1,851	74	129	1,510	146	418	77	4
1850	1,358	6,771	700	8,601	4,447	1,786	158	69	1,257	800	407	131	7
1851	1,043	6,564	561	9,230	3,437	1,918	101	174	429	1,165	185	99	.....
1852	880	6,725	704	6,791	4,314	2,730	70	6	573	1,152	49	80	5
1853	1,021	18,035	636	12,072	3,175	2,595	80	121	354	1,714	20	74	6
1854	742	26,147	923	0,004	2,773	2,112	25	39	513	167	14	46	1
1855	1,310	8,585	847	9,405	2,683	1,150	173	108	1,492	1,285	50	144	6
1856	1,070	23,550	906	4,550	2,501	2,335	94	107	1,732	220	112	39	.....
1857	1,186	21,052	643	7,245	3,057	2,087	97	101	2,244	2,339	207	122	1
1858	1,142	32,810	881	5,849	3,563	2,610	107	42	2,748	2,940	356	73	4
1859	1,078	22,000	1,087	6,000	4,022	2,375	133	63	2,967	1,341	178	57	1
1860	1,539	21,590	885	8,420	4,490	1,943	93	59	3,020	1,190	73	68	.....
Total.....	21,030	311,394	18,345	160,727	69,747	45,735	2,244	2,560	26,313	10,075	3,384	1,403	97

A comparison of the total purchases according to the above table with the total shipments as exhibited for the corresponding period of time in Table I will reveal certain discrepancies that require explanation. For instance, the shipments of land-otter skins from 1842 to 1862 aggregated 170,473, while only 18,345 were purchased of the natives from 1842 to 1860. During this period the Hudson Bay Company rented from the Russian-American Company the strip of mainland lying back of the Alexander archipelago, and, upon mutual agreement, the greater

part of the rent was for many years paid in land-otter skins, purchased in various sections of the Hudson Bay Company's domains. These skins were then in great demand for the trimming of officers' coats in the Russian army, hence the large shipments in excess of what Russian America could supply.

Further comparison of the two tables demonstrates the fact that the skins of the marten (Alaskan sable) and of the bear were rarely exported under the Russian management, being disposed of chiefly to employés of the company, and in consequence of the limited demand these animals were not very extensively hunted.

A comparison of the quantity of furs purchased during the nineteen years included in the exhibit of the above table with the incomplete returns of shipments by American traders in thirteen years, from 1867 to 1880, the latter being necessarily below the real figures, is shown below:

OUTPUT OF FURS IN ALASKA.

Classes of fur.	From 1842 to 1860 (nineteen years).	From 1867 to 1880 (thirteen years).
Sea-otter.....	21,080	52,491
Fur-seal.....	811,394	1,277,333
Land-otter.....	18,345	25,331
Beaver.....	160,727	58,258
Fox.....	60,747	149,550
Arctic fox.....	45,735	27,731
Bear.....	2,244	8,057
Mink.....	2,566	103,313
Marten.....	26,313	105,920
Musk-rat.....	19,075	68,230
Lynx	3,384	.....
Wolverine	1,403	.....
Wolf.....	07	.....

A contemplation of the above table may furnish food for reflection to United States officials, and might probably be of interest to the Russian government.

The prices paid to natives for their furs have, of course, greatly increased since the admission of unlimited competition to the field of operations. The subjoined comparative table of prices will present this:

Classes of fur.	Under Russian rule.	At present.
Sea-otter.....	\$10.00	\$60.00 to \$100.00
Land-otter.....	60	2.50 to 3.00
Black fox.....	\$2.00 to 3.00	10.00 to 40.00
Cross fox.....	60	.250 to 3.00
Red fox.....	60	1.00 to 1.50
Arctic fox (blue).....	80	3.00 to 4.00
Arctic fox (white).....	20	.....
Beaver.....	60	2.00 to 3.00
Mink.....	5	20
Marten (sable).....	10	3.00 to 4.00

Owing to competition the purchasing power of money has not decreased in Alaska in the same ratio as prices have increased. The natives in all accessible sections of the territory are now enabled to purchase necessaries and luxuries of which they did not dream previous to the abolition of the Russian monopoly. The fur-seals of the Pribylaf islands were never purchased of the natives; the latter were paid only for the labor of killing and skinning the animal, as is now done by the present lessees of the islands under the terms of their lease from the United States government.

The market value (London) of the annual yield of furs in western Alaska may be approximately stated as follows:

Classes of fur.	Number.	Price.	Value.
Sea-otter.....	4,500	\$100.00	\$450,000
Fur-seal.....	100,000	15.00	1,500,000
Land-otter.....	2,500	3.00	7,500
Beaver.....	5,800	3.00	17,400
Black fox	920	30.00	27,600
Cross fox.....	2,360	3.00	7,080
Red fox.....	11,400	1.50	17,100
Arctic fox (blue).....	1,190	4.00	4,760
Arctic fox (white)	1,580	3.00	4,740
Bear, black.....	100	5.00	500
Bear, brown.....	711	2.00	1,422
Mink.....	10,300	30	3,000
Marten (sable).....	10,500	3.50	36,750
Musk rat	6,800	10	680
Lynx.....	870	3.00	2,610
Total.....			2,061,82

Adding to this \$100,000 for the furs of southeastern Alaska, the greater part of which were sold in British Columbia, and the value of the annual fur-yield of Alaska may be estimated at \$2,181,832, which amount may be swelled a little by the Arctic fur trade, of which I have no returns.

This estimate, which is necessarily low, furnishes the best answer to the question whether the purchase of Alaska from Russia, considered from a financial standpoint, was a judicious measure.

THE FISHERIES.

Mr. Tarleton H. Bean, of the Smithsonian Institution, enumerates seventy-five species of food-fishes existing in Alaskan waters, over sixty of which Mr. Bean claims to be strictly adapted to the use of man, while the remainder come under the heading only as bait for catching the others.

Of the sea-fishes the cod-fish stands foremost in quantity as well as in commercial importance.

Within a short time after the purchase of Alaska by the United States Professor George Davidson, of the United States coast survey, stated that the soundings of Bering sea and of the Arctic ocean north of Bering strait indicated the largest submarine plateau yet known. In the eastern half of Bering sea soundings of less than 50 fathoms are found over an extent of 18,000 square miles. The extent of the banks in the gulf of Alaska, between longitude 130° and 170° and latitude 60° and 54°, has not thus far been estimated, but it is probably equal to that of the banks of Bering sea.

In general terms it may be stated that the cod-fish is found around the whole south shore of Alaska. Its distribution on banks properly begins, however, with the strait of Frederick, though it is found occasionally as far south as the Farralones. A few schooners fish for cod in British Columbian waters, especially near the Alaskan line. The fish is quite abundant in many of the channels of the Alexander archipelago, and is found in Yakutat bay, off the southern and western shore of Kauak island, in Prince William sound.

The first large bank after crossing the southern boundary of Alaska is found in Chatham strait, but another and smaller bank lies in Peril strait, between Baranof and Chichagof islands. The next bank of general importance is the Portlock bank, located by the explorer of that name along the southeastern coast of Afognak and Kadiak islands. The soundings of this bank are from 45 to 90 fathoms. Some distance to the southeast of Kadiak, in latitude 56° 13' and longitude 153° 30', there is another bank, with soundings of from 22 to 28 fathoms.

More to the southward is found the Simeonof bank, discovered in 1867, between latitude 54° 45' and 54° 38', longitude 158° and 158° 30', with soundings averaging 40 fathoms, and about 20 miles east-northeast of Simeonof island a little higher plateau is reported, with soundings of from 26 to 40 fathoms. The famous Shumagin banks, of which the Simeonof bank, perhaps, is an extension, are located around Nagai, Popof, and Ounga islands, within a short distance of the shore. Most of the shipments of cod-fish from Alaska to San Francisco are made from this vicinity, the banks heretofore named being worked almost exclusively for local consumption.

South of the Shumagins an extensive bank, with soundings averaging 35 fathoms, is known to exist in the vicinity of Sannakhi island, between latitude 54° 67' and 54° 20', longitude 161° 55' and 162° 30', and another large bank is reported off Oonimak pass, in latitude 54°, longitude 166°, with soundings of 40 fathoms. Still farther to the southward, in the vicinity of Akutan pass, a bank with soundings of 50 fathoms was reported in 1869.

A very prolific cod-fish bank exists inside of Captain's harbor, in Oonalashka island, with shallow soundings of from 10 to 20 fathoms. The westernmost cod-fish bank definitely located in the Aleutian chain of islands extends from the south end of Oninnak island into the north Pacific, with soundings of 30 fathoms, in latitude 52° 30', longitude 168° 50'. Many more such banks exist in the vicinity of the Aleutian islands and the eastern portion of Bering sea, but these rich stores of food-fish will probably remain undisturbed for some time to come. Even the banks enumerated here are merely skimmed, as it were, of their abundant produce, the fishing being done chiefly "inshore", in dories, boats, and canoes, the schooners engaged in the business being employed almost exclusively as carriers of the catch.

The cod-fishery of Alaska may be considered as in its infancy. Since Captain Turner, of the schooner Porpoise, sailed from San Francisco in the spring of 1866, and returned in the same year, after a brief visit to Queen Charlotte islands, Onnga, and the Shumagin group, with a cargo of marketable cod-fish, the industry opened by this pioneer has not developed in such a degree as might have been expected from the almost unlimited supply and the favorable location of the banks.

As has already been stated, no deep-sea fishing, such as is carried on in the north Atlantic, exists in Alaska. In the channels of the Alexander archipelago the fishing for cod has until lately been confined altogether to the natives of the Thlinket tribes, who opposed all attempts of white men to compete with them in this particular industry. The few small sloops engaged in the business in this region depend altogether upon the inclination of these natives to exert themselves in obtaining their cargoes. These fishermen use their own appliances, fishing with bark lines and wooden iron-pointed hooks, and two men in a canoe feel satisfied with a catch of 30 or 40 fish, which they sell at a comparatively high rate to the captains of the sloops; and thus it happens that these crafts are frequently detained for many weeks awaiting a cargo that could easily have been secured within five or six days by white men.

In Prince William sound the cod-fish is only caught by natives for their own consumption at a season when no other fish can be obtained in abundance. The fishing here is from canoes within a short distance of the shore, mostly in well-sheltered bays. Perhaps one-half of the catch is consumed fresh, while the other half is split and hung up to dry in the open air, without salting or smoking. In spite of the damp climate of this region the specimens of dried cod-fish that came under my observation were apparently well cured, quite palatable, and in a better condition than salmon or red-fish treated in the same manner, the disagreeable taint which seems to be inseparable from dried fish of the salmon family being scarcely perceptible in these specimens of dried cod-fish. As the cod-fish of Prince William sound is now confined almost entirely to its northern shore, it is safe to state that the total annual consumption, both fresh and dried, does not exceed 30,000 or 40,000 fish.

In English bay, on the southwestern extremity of the Kenai peninsula, the natives fish for cod occasionally, but only when unfavorable weather prevents them from hunting outside of the limits of the bay. The cod here is all consumed fresh, and the total catch cannot exceed 2,000 or 3,000 fish.

Proceeding from here southward to the islands of Afognak and Kadiak we meet a people partially subsisting upon cod-fish throughout the year. The Portlock bank is within easy reach of all the settlements on the eastern shore of these islands, but only the most enterprising among the people, chiefly the creoles or half-castes, venture out to any distance in sloops built on the islands. The principal fishing is done close inshore in small boats and dories. The old men and the boys of the creole and Innuit families may be seen in their boats or canoes a mile or two from shore on almost any morning throughout the year, except when a furious northeaster keeps them at home. Nearly all this catch is intended for immediate consumption, as the inhabitants of this region do not dry any cod-fish. In the creole settlements of Afognak, Spruce island, and in the vicinity of Kadiak fresh cod-fish, together with potatoes grown in their little garden-patches, form the constant diet of the inhabitants throughout the year. In the harbor of Saint Paul, the central settlement of this group of islands, the cod-fish is also prepared for exportation. The favorite ground for these fishermen is a flat with soundings from 15 to 20 fathoms, and here they average a daily catch of 200 fish per man. The shipments from this point to the California market have been thus far limited to small quantities of boneless fish put up in 30-pound boxes.

The only active cod-fish industry existing in Alaska is located about the Shumagin islands, the firm of McCollam & Co., of San Francisco, having a permanent station at Pirate cove on Popof island. The force of this establishment consists of a foreman and eight fishermen, who go out in their dories during the day and dress their catch on shore in the evening. The fishermen who come up with the schooners from San Francisco generally ply their lines within easy reach of the harbors on Popof and Nagai islands. The average catch per man in this vicinity is also 200 fish, though catches of from 500 to 600 have been recorded.

Since the first opening of this industry on the Shumagin banks the total annual catch has not exceeded 500,000 fish. The best results in dory fishing at Pirate cove are obtained in the month of February. The schooner fishermen meet with good success from late in April until the middle of August, and the fishing on the deep banks of Simeonof island is best in August and September. At the latter place it has been reported that ten men caught 4,000 fish in one day, the average catch being from 1,600 to 1,800.

All the fishermen engaged in the vicinity of Kadiak and on the Shumagin banks agree in the statement that the abundance of cod-fish is as great as ever, occasional fluctuations in the catch being due entirely to migration of the fish.

Careful investigations by Professor Jordan and Dr. T. H. Bean, of the United States Fish Commission, into the quality of the Shumagin cod have shown no essential difference between this species and that of the north Atlantic. The facilities for the pursuit of the industry are greater on the Pacific side than they are on the Atlantic. The journey from San Francisco or Puget sound to the Shumagin banks is comparatively brief and very safe, and the banks are within a few hours' run of numerous commodious harbors. In view of all these circumstances the conclusion is unavoidable that the great want of the Shumagin fisheries is not fish or safety to the fishing-craft, but simply a demand for fish, and that a market such as the New England fishermen enjoy would whiten the vast extent of the Shumagin banks with sails of all descriptions. The yield of cod-fish, so far as it could be obtained from the records of shipments to San Francisco for the last few years, is given in the subjoined table. In connection with this subject it may be mentioned that fully one-half, if not more, of the cod-fish brought to San Francisco is caught in the sea of Okhotsk. The fish of the latter sea is not superior in quality, being caught early in the season and before reaching the best stage, and the quantity does not seem to exceed that caught on the Shumagin banks, while the average weight is somewhat less. The question arises, why do San Francisco fishermen go to the Okhotsk sea at all?—a question which must be left for future investigators to solve.

The shipments of cod-fish from the Shumagin islands to San Francisco in the year 1880 consisted of seven cargoes, aggregating 432,000 fish and weighing 1,728,000 pounds. During the same year 725,000 fish were brought in five cargoes from the Okhotsk sea, having been caught in Russian waters.

The cod-fishing of the north Pacific has been carried on for sixteen years, with the following results:

Year.	Vessels.	Fish.	Year.	Vessels.	Fish.
1865.....	7	469,400	1874.....	6	381,000
1866.....	18	724,000	1875.....	7	504,000
1867.....	19	943,400	1876.....	10	758,000
1868.....	10	608,000	1877.....	10	750,000
1869.....	10	1,032,000	1878.....	12	1,190,000
1870.....	21	1,265,500	1879.....	13	1,499,000
1871.....	11	772,000	1880.....	8	1,206,000
1872.....	5	300,000	Total.....		12,052,300
1873.....	7	550,000			

Of this three-fifths, or 7,771,380 fish, came from the Okhotsk sea, and the remainder, or 5,180,920, from Alaskan waters.

Salmon shipments aggregated somewhat over 3,000 barrels salted and 8,000 cases canned.

A peculiarity of the Alaska cod-fishing industry is that the fish is not cured in the vicinity of the banks. The cod is only cleaned and pickled on board of the carrying-craft, taken down to San Francisco and there pickled anew, being finally taken out and dried in quantities to suit the demands of the market. Expert fishermen located on the Shumagin islands and at Kadiak claim that the fish could be cured on the spot as well as it is done at Cape Ann and other Atlantic cod-fishing stations. It is difficult to understand the reason for the process adopted by these San Francisco firms. The repeated pickling certainly does not serve to enhance the quality of the Shumagin cod-fish, and it is probably owing to this fact that the eastern cod-fish commands a higher price in the markets of the Pacific coast.

Another deep-sea fish of importance in Alaskan waters is the halibut. It exists all along the coast from British Columbia northward and westward, and also in the deep harbors and straits of the Aleutian chain of islands. Among the natives of the Alexander archipelago the halibut is a very important food-staple, being obtainable throughout the year.

The Thlinket fishermen exhibit great patience and skill in catching this huge flat-fish, which often attains a weight of several hundred pounds in these waters. It is consumed in immense quantities, both fresh and smoked, in all the villages and settlements inhabited by Thlinket tribes. Along the coast inhabited by Innuit tribes and about the Aleutian islands the halibut does not exist in the same abundance, and the whole supply is consumed fresh.

The only attempt thus far made in Alaska to preserve halibut for exportation is reported from the Klawak fishing establishment, on Prince of Wales island. It is doubtful whether anywhere in Alaska outside of the southeastern division a sufficient quantity of halibut exists to warrant fishermen in making a special business of their catch.

In order to furnish an adequate idea of the immense consumption of fish in Alaska it becomes necessary to discuss each division separately in this connection.

First. SOUTHEASTERN ALASKA.—This division has a population of over 7,000 inhabitants, all of whom depend more or less upon fish for subsistence. This population consists almost entirely of natives engaged in catching and curing various kinds of fish throughout nearly the whole year; and even during the hunting season, when fur-bearing animals are in their prime and all the able-bodied male adults are busy in their pursuit, the old men, women, and youths of both sexes remain in the villages situated upon the sea-shore, fishing whenever the weather permits. Though the variety of fish is great in this region, halibut and salmon always form the basis of supply. In the Sitka market may be seen, in addition, at the various seasons several species of rock-fish, trout, cod, and herring, while mussels and clams are also abundant. The halibut is here caught exclusively with bark lines, and hooks of peculiar construction. The hook consists of two pieces of wood fastened together at one end with strips of spruce root, so as to form an acute angle with each other, an arm of the angle being furnished with a bent pointed piece of iron. The wood is generally carved to represent some animal or fish, and the bait, usually herring, is tied on so as to cover not only the hook but also the wooden shaft on which the hook is fastened. The halibut will gulp down the bait, opening its jaws wider and wider, the short arm of the hook being constructed so as to leave only a narrow space between it and the iron point, thus admitting of the motion necessary to fasten the fish while preventing its escape. A halibut thus held with its mouth wide open will soon be drowned and can be easily secured. This Indian style of halibut-hook seems to be more effective than that of civilization. Set-lines, each provided with one hook, a stone sinker, and a buoy consisting of an inflated bladder or the stomach of a seal, with a small signal or flag attached to indicate when the fish is hooked, are in common use, and are generally set in 10 or 20 fathoms of water around the numerous islands of Sitka bay.

In the open bay of Sitka salmon are caught occasionally by trolling and by spearing.

Herring are caught in immense quantities by impaling them on a sharp nail fastened to a long thin strip of wood, and are consumed both fresh and dried, but the larger portion of the catch is converted into oil. The spawn of the herring, which is collected upon spruce boughs placed in shallow water for the purpose, furnishes a

favorite article of food in a semi-purified state. The fish most commonly seen on the drying-frames at Sitka village at all times of the year are halibut; they are cut in strips, dried partially in the open air, and then suspended in the smoke of the dwelling-houses.

At the fishing station of Klawak, on Prince of Wales island, halibut are caught with the same style of hook, and lines of kelp or bark. The principal bait used here is the entle-fish, the fishing being done in from 10 to 20 fathoms of water. In fishing for the cannery at this place the Indians average eight or ten halibut to a canoe per day, with two persons, using not more than three or four hooks. The amount canned here per annum has not exceeded 200 or 300 cases, of two dozen 2-pound cans each.

At Klawak, as well as at Old Sitka, salmon has been canned during the season, but the latter establishment has been abandoned. The Klawak cannery has had in its employ during the season as many as 160 Indians and 20 whites, among the former 30 being women and 5 or 6 boys. The shipments of canned salmon aggregated between 7,000 and 8,000 cases of four dozen 1-pound cans each. The once famous rédente or deep-lake salmon-fishery on Baranof island, which at one time during the Russian rule supplied this whole region, and whence 2,000 barrels of salt salmon were shipped in 1868, now lies idle.

In order to arrive at the quantity of fish consumed by the people of this division it is necessary to take into consideration the fact that fully one-half or more than one-half of the catch is consumed in a dried state, very much reduced in bulk and weight. The waste in the drying process is so great that one person can easily eat at a single meal a fish that weighed 20 or 30 pounds when alive. It is therefore entirely within the bounds of probability that each individual man, woman, or child consumes the equivalent of between 3,000 and 4,000 pounds of fresh fish per year. Among the Indians of the west the proportion must be much larger, but in the southeastern division game of various kinds is still comparatively abundant. Thus, with a population of 7,000 in round numbers, we may calculate an annual consumption of 24,000,000 pounds of fish; or, striking an average of 5 pounds per fish, between large and small, halibut, salmon, cod-fish, and herring, nearly 5,000,000 fish of all kinds, in a section the inhabitants of which consume less fish than any other coast-people in Alaska.

The enlachan (ulikon), or candle-fish, though consumed by the people of this division, is obtained chiefly in barter from the British possessions, the catch in Alaska being confined to the Stikine mouth and its immediate vicinity.

Second. PRINCE WILLIAM SOUND.—The people of this section, numbering some 600 in all, inhabiting the coast from Mount Saint Elias westward to the east coast of the Kenai peninsula, though engaged in fishing to some extent at all times of the year, do not depend altogether upon this article of food for subsistence, and consequently the aggregate consumption, or rather destruction, of fish is less than in the southeastern division. Seal-meat at all times of the year, and the flesh of mountain goats during the summer, together with that of bears, marmots, porcupines, and sea-fowls, are consumed in perhaps equal proportions with fish. A limited number of cod-fish, halibut, herrings, and the various species of salmon comprise the catch of this region, two-thirds of which is probably eaten fresh and the remainder dried, no salt fish being prepared for home consumption or for export. An annual consumption of about 60,000 fish of all kinds (but chiefly salmon), representing an aggregate weight of 300,000 pounds, may be safely estimated for the Prince William Sound section of the coast.

Third. COOK'S INLET.—The shores of Cook's Inlet are inhabited by about 800 natives and a few families of creoles, who are engaged exclusively in fishing during the whole summer season, from May to September and October. During this time the fur-bearing animals are not in good condition, and consequently the whole population, down to the small boys, turn their attention to fishing. In addition to the native fishermen, white men are engaged in salting salmon at two points in the inlet, at the mouth of the Kenai or Kachem river and that of the Kassilof. (a) The mode of capturing the salmon adopted by the natives for their own purposes is exceedingly primitive and unsatisfactory. The fish being too large to spear with safety a frail staging of poles is erected at right angles with the river bank, extending into the stream. An Indian seats himself at the outward end of this frame, and, holding in the turbid water a large wicker basket with an aperture about 3 or 4 feet in diameter, waits patiently until a salmon enters the basket; but of course this mode of capture is impracticable where the water is clear, and even in the muddiest stream hundreds pass by where one enters.

The king salmon, or chavicha, frequent the streams of the inlet between May 20 and August 20. They are most abundant during the summer neap-tide, but in numbers their proportion to the other and less valuable salmon species is as one to three. This disparity in quantity, however, is equalized somewhat by bulk and quality. The maximum length of the chavicha reported since 1870 was 6 feet, and the maximum weight 97 pounds, the average length being about 4 feet and the average weight 50 pounds. They appear regularly on the 20th of May, running in pairs and not in schools, and hugging the shore. They at all times refuse to take the hook, and prey upon the candle-fish and stickleback, not, however, consuming very many. They are caught by the whites in weirs and nets, the latter being 12 feet deep by 120 feet in length, with about 8- and 8½-inch mesh. The weirs, consisting of poles and a wicker-work of roots and bark, are erected on the mud flats of the river at low tide.

a Last year a cannery on the Kassilof river put up 6,000 cases of two dozen cans each.

After the king-salmon two other varieties, the silver (kisueh) and the red salmon, make their appearance in immense numbers. The mode of capturing the salmon adopted by the white fishermen is essentially the same on the Kenai and the Kassilof rivers. The number of king-salmon captured at the latter place during 1880 was 8,000, weighing 320,000 pounds, while the red and the silver salmon numbered 18,500, of an average weight of 10 pounds each, or 185,000 pounds. At Kenai the number of king-salmon secured was 7,500, weighing about 300,000 pounds.

The native population of Cook's inlet comprises 168 families (averaging about four individuals each). Each of these families prepares at least 750 pounds of dried salmon for winter provision, which would give an aggregate amount of 126,000 pounds of dried salmon put up on the inlet, representing over a million pounds of fresh fish. The creole families distributed over the various settlements number 44; these put up about 6 barrels of salt salmon each, or 264 barrels, weighing 52,800 pounds. Of dried fish these creoles put up 400 pounds to each family, or an aggregate of 17,600 pounds, representing 176,000 pounds of fresh fish. Thus we arrive at the astonishing aggregate of 2,760,000 pounds of fish as the annual consumption by natives and fishermen on Cook's inlet. It must be borne in mind, however, that by far the greater portion of this immense bulk is wasted in the process of drying.

In former times the natives of the lower part of Cook's inlet engaged largely in the capture of beluga, or white grampus, deriving from these monsters the greater part of their subsistence. The belugas seem to be plentiful in the turbid waters of the inlet, and schools of them enter some of the rivers as far as the limits of tide-water, but the practice of hunting them seems to be dying out among the present generation, which finds easier modes of procuring subsistence, and the killing of the beluga is now a rare occurrence.

Large schools of the eulaehan, or candle-fish, frequent the larger rivers of the inlet and are highly prized as food, but their presence in the rivers is exceedingly brief, and the catch can scarcely be considered as an item in the domestic economy of this region.

Fourth. THE KADIAK DISTRICT.—The piscatorial wealth of this district has already been referred to in regard to cod-fishery, but at the present time the salmon catch is of greater importance both for home consumption and for export. The consumption of dried salmon within the district by 159 families of creoles and 255 families of natives amounts to 310,500 pounds, representing 3,105,000 pounds of fresh fish. The creole families put up in addition nearly 1,000 barrels of salt salmon, weighing approximately 200,000 pounds. The consumption of fresh salmon, as such, may be estimated at one-half of that of cod-fish throughout the year.

In addition to this immense catch of salmon for home consumption there are on the Karluk river, emptying into Shelikhof strait, on the west coast of Kadiak island, two fishing establishments of considerable magnitude; between 1,600 and 1,800 barrels of salted salmon being secured here by the two firms during the season of 1880. (a) Several hundred of these barrels were filled with bellies only, a process that required the killing of 37,500 fish in order to fill 125 barrels. Three hundred thousand pounds of salmon were converted into "yukala" at this station in 1880, yielding 17,500 pounds of dried fish, and it is safe to presume that at the present time three or four times this quantity is salted at Karluk and shipped to San Francisco. The run of salmon in the Karluk river at the height of the season is so great as to interfere seriously with the movement of canoes in crossing the stream, and from 10,000 to 20,000 barrels could be filled here easily during the season. The fishing is done entirely with seines from 20 to 25 fathoms in length, 3 fathoms in depth, with a mesh of 3½ inches. The average weight of the salmon secured at Karluk is 10 pounds. The whole native population is employed in these fisheries during the summer, turning their attention to hunting only during the winter.

Among the creoles of the Kadiak district and the more prosperous of the native families the use of the bidarka or kaiak has been to a great extent superseded by small craft—sloops and pluggers, mostly built to order by the skillful carpenters of the creole settlements of Afognak and Yelovoi. A few fishing-schooners ranging from 15 to 20 tons burden have also been constructed at Kadiak and Wood island, but these are employed in fishing comparatively a small portion of the time, being chartered by traders during the hunting season.

The salmon of Karluk is perhaps a little inferior in quality to that of Cook's inlet, but, being possessed of flesh of a deep red color, it meets with ready sale.

Fifth. THE BELKOVSKY DISTRICT.—This district includes the Shumagiu islands, which have already been discussed in connection with the cod-fishery. Throughout this section salmon is caught only for home consumption, for which purpose there seems to be an abundant supply; but with cod-fish near at hand in the immediate vicinity of every settlement it is not looked upon as being of great importance. The inhabitants of this district are nearly all successful sea-otter hunters, who are able to purchase large quantities of imported provisions, and consequently the consumption of fish is much less than in some other districts. A calculation could not be made upon the same basis here as in the Kadiak or Kenai districts, but the 167 families inhabiting the settlements of Belkovsky parish consume perhaps from 150,000 to 200,000 pounds of salmon annually, fresh and dried, and an equal quantity of cod-fish.

Sixth. THE OONALASHKA OR ALEUTIAN DISTRICT.—The inhabitants of Oonalashka district engage chiefly in the pursuit of the sea-otter, and fishing is limited by the demand for home consumption. The fishes here are nearly the same as those of the Kadiak and the Belkovsky districts, with the exception of the green-fish or

a Last year one firm shipped from the same place 5,000 cases of canned salmon and 2,100 barrels of 200 pounds each of salt salmon.

rock-cod, which is plentiful in the deep bays of the Aleutian chain of islands; flat-fishes, halibuts, and flounders are very abundant, and are taken in large quantities with spears; the halibut, however, is not as large as that found in other districts of Alaska. As has already been remarked, cod-fish also frequent the harbors and a few banks in Bering sea, and the striped fish, yellow fish, or Atkha mackerel exists here in immense numbers. This fish (described by Pallas as *Labrax monopterygius*, but known at present as *Pleurogrammus monopterygius*) is found about the whole of the Aleutian chain, and also among the Shumagin islands, congregating in large schools. At Attoo it is known as the kelp-fish, on the Shumagins as the yellow or striped fish, and from Oonalashka to Atkha as the Atkha mackerel. The last name appears very appropriate, from the fact that when salted and preserved just as mackerel are treated, it has the same taste as the latter. There can be no doubt that if this striped fish were properly introduced into the markets it would meet with a ready sale, as it is certainly an excellent food-fish either salted or fresh. Traders at Nazan bay, Atkha island, report that 500 to 600 barrels could easily be put up by them in that bay alone. The latest price of this salt fish reported from San Francisco was only \$10 a barrel, but it is safe to presume that the same fish put up in a marketable shape in kits would command a better price.

Three or four species of trout and many varieties of salmon frequent the bays and larger streams of this district, existing everywhere in sufficient quantity to supply the inhabitants with winter stores of dried fish or yukala. Captain's harbor, on Oonalashka island, is frequented at certain seasons by immense schools of herrings of a large variety, and exceedingly fat. Occasional shipments in small lots to San Francisco meet with ready sale in that market, especially for pickling.

Here, as in the Belkovsky district, the comparative wealth resulting from the sea-otter trade has caused the natives to neglect their natural food-supplies, such as fish and game, and to purchase imported provisions; consequently the consumption of fish is proportionately much smaller than in less favored districts; but at a rough estimate the annual destruction of fresh fish by the inhabitants of the Oonalashka or Aleutian district, numbering some 1,400, may be put down at 700,000 pounds.

Seventh. THE BRISTOL BAY DISTRICT.—This district comprises the coast of Bering sea, between Krenitzin strait and cape Newenham, with the rivers Oogashik, Igagik, Naknek, Kvichak, Nushegak, Igushuk, and Togiak, and their tributaries. The natives of this region, numbering about 4,000, derive a very large proportion of their subsistence from the various kinds of salmon, which frequent the rivers in the greatest abundance. Exports from this section have thus far been limited to from 800 to 1,200 barrels of salted salmon per annum from the Nushegak river.

The inhabitants of a few settlements on the north coast of the Alaska peninsula and about Bristol bay engage occasionally in the pursuit of the whale and walrus, gaining thereby a very considerable addition to their food-supply, but the consumption of salmon is not thereby perceptibly lessened.

The annual "run" of the salmon family in the rivers of this district begins in the last half of May and continues until the beginning of September. The inferior species of red-fish and "gorbusha" are caught until late in October, and even in November, while the various kinds of salmon-trout and white-fish exist under the ice of streams and lakes throughout the winter. By the middle of September the banks of lakes and rivers, whose waters begin to fall with the first frosts in the mountains, are covered with rows and heaps of dead silver and king salmon two and three feet in height, representing the number of these fish that died from exhaustion and bruises received in struggling with the fierce current, the rocks, and snags in their annual journey of reproduction. The description of one river at this period may serve as a type for all. In the month of September, 1880, I struck the Igushuk river where it springs from a beautiful lake surrounded by mountains of considerable height. The gravelly beach of the lakes and every bar and shoal of the river was lined with the decayed and putrefying bodies of the fish, which lay in windrows, as it were, from one to two feet deep; while every overhanging bough and projecting rock was festooned with the rotten bodies. At night a space had to be cleared of this disgusting mass to pitch our tent upon, and the abominable stench affected us to such a degree that, though entirely without provisions, we did not feel the pangs of hunger there.

There can be no doubt that here, as well as in the districts already discussed, a more economical method of preserving the fish would permit of the exportation of large quantities, though the salmon caught annually to feed these 4,000 people cannot be estimated at less than 2,000,000 pounds.

Eighth. THE KUSKOKVIM DISTRICT.—We now turn our attention to another district drained by a great river, and somewhat densely inhabited by an almost purely ichthyophagous population. Salmon in three or four varieties throng the channel and sloughs of the Kuskokvim from May to October; trout and white-fish of various kinds are trapped under the ice throughout the winter, while the backwaters of the tundra, the lakes, and ponds are full of pike and a very toothsome and nutritious small black-fish peculiar to this region and the Yukon delta, which has been named, in honor of Mr. William H. Dall, *Dallia pectoralis*. The fish is so abundant that only old men, boys, and women engage in the catch, while the men hunt reindeer and moose, and pursue the "maklak" (a large seal) for the sake of its luscious blubber. In the estuary of the Kuskokvim and the wide-mouthed tide-creeks of the low delta land the beluga, or white grampus, is still quite plentiful, and furnishes ample stores of blubber and oil, a large proportion of which finds its way to the people living above tide-water, who can only obtain by purchase the oil in which to dip their dried salmon.

The consumption of salmon in this district, thickly populated as it is within a hundred miles of the coast, is exceedingly great, for here not only human beings but dogs also must be fed. The ratio accepted for the other districts of 500 pounds of dried fish for each individual must be increased here by at least one-fifth, representing 6,000 pounds of fresh fish destroyed for the maintenance of one individual and his proportionate share of the family dogs.

Throughout the winter, when snow lies deep through forest and tundra, and hunting is made impossible, the native of the valley of the Kuskokwim depends entirely upon the supply of white-fish (*Coregonus*) in the main river and its tributaries, and every village has its traps set over eddies and shoals as soon as the ice is firmly established. The traps are of nearly the same construction as those used in the summer, but of somewhat smaller dimensions, as they are not intended for the reception of the huge king salmon or the full-grown "nalima". Every morning at dawn, or between 8 or 9 o'clock, the men of the village can be seen making their way to the traps armed with ice-picks, curiously fashioned from walrus-tusks or reindeer-antlers, for each succeeding night a new, solid ice-covering forms over the trap, which must be removed to get at the fish. Sometimes after an extraordinarily cold night it happens that the whole wicker-basket of the trap, including its contents, is frozen solid, an accident involving considerable labor, as the trap must then be taken to pieces and built anew. In spite of all such difficulties the supply of white-fish is generally sufficient for the maintenance of the Kuskokwim people during the winter, with the help of the scanty stores of dried salmon preserved during the summer and the hares and ptarmigans trapped by the boys.

In the lakes, the feeders of all the tributaries of the Kuskokwim, the salmon-trout is quite plentiful throughout the winter, and is secured by the natives with hooks and lines or dip-nets through openings in the ice. Were it not for this unfailing supply of white-fish and trout it would be impossible for these improvident savages to live through the winter. This remark refers only to the inhabitants of the upper river. On the lower river, within the influence of the tremendous tidal action described elsewhere, the river does not sustain a solid covering of ice, and seals are hunted throughout the winter, furnishing ample supplies of luscious oil and blubber; and even the beluga comes up the gulf-like estuary in schools, puffing and snorting like a fleet of tug-boats between the masses of ice floating up and down with the changing tide.

The oil obtained from the beluga and the large seal (maklak) is a very important article of trade between the lowland people and those of the mountains, the latter depending upon it entirely for lighting their semi-subterranean dwellings during the winter and to supplement their scanty stores of food. The oil is manufactured by a very simple process. Huge drift-logs are fashioned into troughs, much in the same manner as the Thlinket tribes make their wooden canoes. Into these troughs filled with water the blubber is thrown in lumps of from two to five pounds in weight; then a large number of smooth cobble-stones are thrown into a fire until they are thoroughly heated, when they are picked up with sticks fashioned for the purpose and deposited in the water, which boils up at once. After a few minutes these stones must be removed and replaced by fresh ones, this laborious process being continued until the oil has been boiled out of the blubber and floats on the surface, when it is removed with flat pieces of bone or roughly-fashioned ladles and decanted into bladders or whole seal-skins.

The densely-populated delta between the mouths of the Kuskokwim and Yukon rivers, with its great net-work of channels, sloughs, rivers, and lakes, offers to its inhabitants scarcely any article of food but such as is drawn from the water, the beluga and the seal furnishing the meat and oil so necessary to sustain life in high latitudes, while the salmon and white-fish abound here as they do on the larger rivers; and in addition to these is found the small black-fish named *Dallia pectoralis*. This fish, not exceeding five or six inches in length, and scarcely known to the scientific world until a few years ago, is of the greatest importance for the inhabitants of this delta. It is found in all the shallower channels and lagoons throughout the country in such quantities as to furnish subsistence for whole settlements in the most desolate regions, where nothing else could be found to sustain life at certain seasons of the year. The black-fish, as it is called by the natives, is exceedingly fat, and a good quality of belucid oil is obtained from it by the process described above. Its presence is of the greatest advantage to the civilized traveler who may happen to traverse this almost unknown region, as it represents the only palatable article of food to be found there during the winter; and without it he would be obliged to subsist upon dried fish, blubber, and oil in various stages of decomposition. The people inhabiting the region where the black-fish is found are in a better condition physically when spring approaches than any of their neighbors in regions where it does not exist, being almost exempt from the annual period of starvation elsewhere preceding the beginning of the salmon run in the rivers. The 3,000 or 4,000 people inhabiting the delta must be looked upon as fish-eaters only, and the consumption of fish by them in the course of the year must be correspondingly great.

Ninth. THE YUKON RIVER DISTRICT.—It is next to impossible to form an adequate estimate of the consumption of fish on a river of the magnitude of the Yukon from the point where it enters Alaska on the British Columbian boundary until it reaches Bering sea. We know that the run of the various species of salmon is very large, though not extended over a long period, and also that a large proportion of the catch is preserved by the wasteful process of drying only, which reduces a fish weighing as it comes out of the water from 60 to 100 pounds to a flat and shriveled object of from 5 to 10 pounds. The loss on all classes of fish is in a like proportion, and consequently the quantity required for the sustenance of a single individual throughout the seven or eight months of winter must be very great.

As far as the Eskimo race has extended its settlements on the banks of the river, to a distance of from 200 to 300 miles from the sea, the fish-traps already described lie on both banks; but as this mode of fishing affects only such fish as ascend the stream along the banks and eddies, the number of salmon which complete their journey of reproduction without meeting any obstacles must exceed by far the number secured by the natives. In view of the immense width and depth of the river it seems very doubtful whether any of this immense mass of fish could be secured by fishermen, even were they provided with all the appliances now in use on the Columbia river in Oregon and the Sacramento in California.

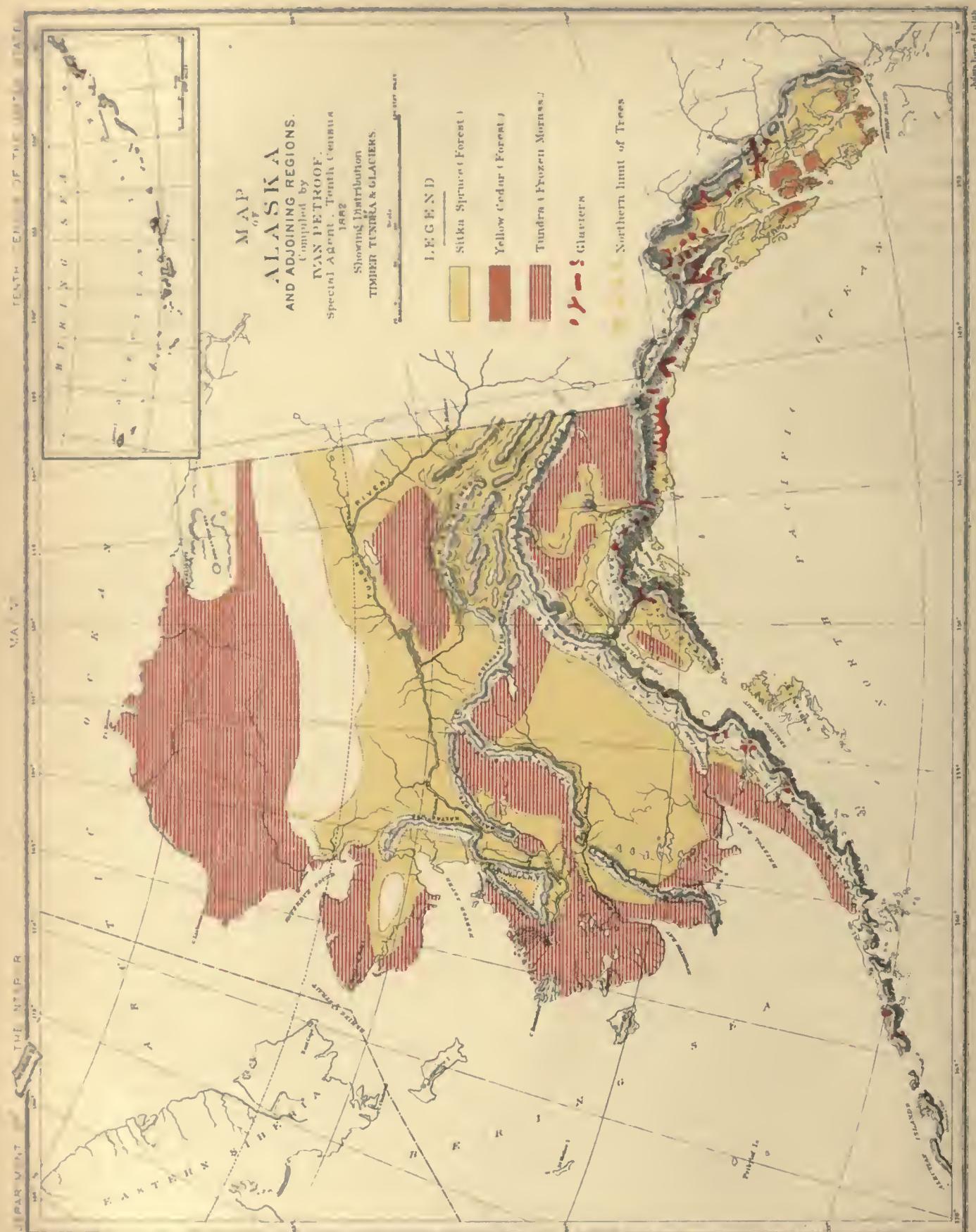
The Athabaskan tribes inhabiting the upper Yukon region do not, as a rule, make use of traps. The game is still plentiful in their country, and they resort to fishing only with hooks and lines, chiefly in the smaller streams and lakes. For the purpose of securing a small stock of fish for traveling-stores and dog-feed, whole families descend the river in the summer and camp at some favorable spot for a month or two, while others obtain the same supplies in exchange for furs from the natives of the lower river. In addition to man and his dogs we find here another factor in the consumption of fish in the bear (*Ursus Richardsonii*), who is an expert fisher, and consumes immense quantities both of salmon and white-fish. He is accustomed to select a projecting point on the sloping bank of a river, where he stretches himself close to the water's edge and watches the surface of the turbid stream. The ripple caused by the passage of a large fish informs him of the proper time to make a sweep with his huge paw, the claws projecting like so many hooks, and he seldom fails to bring forth one or more fish at a time. These he carries away to some distance from the river bank, where he lies down and strips the bones of all the flesh as neatly as if he intended to preserve the complete skeleton as a specimen. The bones of salmon and white-fish are frequently found at a distance of a mile or two from the streams, where the fish have been carried by bears to feed their young. These animals are plentiful throughout the Yukon region, and subsist upon no other food from the time the salmon begins to run until the berries are ripe, late in August, when the shaggy fish-eaters become strict vegetarians.

For the Yukon River district the annual destruction of fish for the maintenance of each individual cannot be calculated at less than 6,000 pounds.

Tenth. THE ARCTIC DISTRICT.—Of the consumption of fish along the Arctic coast of Alaska to the northward of Bering strait no reliable data are accessible. The people subsist to a greater extent upon seals, walruses, and the meat of whales. The run of salmon in the few larger rivers watering this region is necessarily short, and the fish is much smaller than we find it to the southward; the natives, however, manage to put up during the brief summer a small supply of dried salmon and white-fish. "Fakhnia," a species of tomcod, is caught during the summer along the lower Arctic coast, and salmon-trout ascends the larger streams. Cod-fish have been caught at a few points along the Arctic coast, but no banks have been located. Of late years, since whaling has been pursued more actively by means of steam-vessels and improved appliances, the Eskimo living upon the coast have lived so largely upon the offal left to them by whalers after cutting up the huge cetaceans that they have been enabled to neglect fishing to a great extent; but unfortunately these same whalers, who temporarily increased one source of subsistence, destroyed by thousands an animal furnishing the staple food of these regions—the walrus—which is rapidly being exterminated for the sake of its ivory. The animals are shot with rifles from ships and boats, and out of ten animals killed but two or three are secured, while seven or eight sink and are lost. This wasteful practice is a question of life or death with the poor Eskimo. At points most exposed to such depredations, like Saint Lawrence island, in Bering sea, two-thirds of the people have already perished by starvation. The evil is increased by the effects of spirituous liquors freely distributed among these natives by whalers and illicit traders, causing the latter to neglect, during periods of wild intoxication, the laying up of stores for winter.

The whaling industry of the north Pacific is now carried on chiefly on the American side of the Arctic, beyond Bering strait, with the exception of some coast-whaling on the California coast and in the channels and passages of Alexander archipelago. The vessels engaged in the business on the Alaskan coast in 1880 were thirty-six sailing-craft and four steamers. Their catch consisted of 35,000 pounds of whalebone, 15,000 pounds of ivory, and 21,000 barrels of oil. The value of the bone alone was \$850,000; that of the oil 280,000; while the ivory brought \$9,000, making a total of \$1,139,000, or an average of \$28,475 per vessel—certainly a remarkable showing of the profits accruing from this industry. The 15,000 pounds of ivory represent at least 3,000 walruses, the average weight of a pair of tusks being 5 pounds. The 3,000 walruses whose tusks were secured would indicate that at least 10,000 were killed, seven-tenths of which were lost. In view of such wanton destruction it is easy to foresee the extermination, at no distant date, of the people who depend upon the walrus for subsistence.

The common hair-seal and the sea-lion have decreased in numbers to such an extent along the whole coast-line of Alaska that their pursuit no longer occupies a place among the industries of the country, and they supply a wholly local demand. The sea-lion has almost disappeared from the vicinity of the sea-otter hunting-grounds, compelling the trading firms to import such skins from the coast of lower California and Mexico, in order to furnish their hunters with the material for making their canoes. Sea-lion meat was once a staple article of food with the Aleutian people and among all the Eskimo tribes, but at present it is looked upon as a delicacy not easily obtained.



The supply of fish of various kinds in Alaska is practically inexhaustible, but the stores lavished upon the natives of that country by bountiful nature could not be more wastefully used than they are now. Any development in the fishing industry must necessarily be an improvement, causing a saving in the supply.

The proportion of Alaskan fish brought into the markets of the civilized world, when compared with the consumption of the same articles by the natives, is so very small that it barely deserves the name of an industry of the country. The business, however, shows a decided tendency to increase in magnitude, and within the last few years the shipments of salted salmon in barrels from the Kadiak-Aleutian divisions have been steadily increasing, until they now amount to between 4,000 and 5,000 barrels per annum. These sell readily at \$9 per barrel in San Francisco, leaving a handsome profit to the men who have invested capital in the enterprise. The number of cases of canned salmon shipped during the last year was between 8,000 and 9,000, each case containing two dozen 2-pound cans. Cod-fish shipments from the Shumagin islands and Bering sea amount to nearly 600,000 fish of the average weight, when cured, of from 3 to 5 pounds each, bringing from 6 to 7 cents per pound. But few men with a small amount of capital are engaged in this industry in Alaska in the present unsettled condition of the country.

THE TIMBER OF ALASKA.

The claims of Alaska to the possession of vast tracts of valuable timber have been both exaggerated and disputed.

At the beginning of this chapter we sketched the distribution of forests throughout the whole country. In detail we find that the timber of Alaska consists of evergreen trees principally, the spruce family preponderating to an overwhelming extent. These trees grow to their greatest size in the Sitka or Alexander archipelago. An interval occurs from Cross sound until we pass over the fair-weather ground at the foot of Mount Saint Elias, upon the region of Prince William sound and Cook's inlet, where this timber again occurs, and attains very respectable proportions in many sections of the district, notably at Wood island and portions of Afognak, and at the head of the Kenai peninsula and the two gulfs that environ it. The abundance of this timber and the extensive area clothed by it are readily appreciated by looking at the map, and are rendered still more impressive when we call attention to the fact that the timber extends in good size as far north as the Yukon valley, clothing all the hills within that extensive region and to the north of Cook's inlet and Kenai peninsula, so that the amount of timber found herein is great in the aggregate. The size of this spruce timber at its base will be typified in trees on Prince of Wales island 50 feet and over in height, with a diameter of at least 3 feet. They have not grown as fast as they would have grown in a more congenial latitude to the south, such as Puget sound or Oregon; hence when they are run through the saw-mill the frequent and close proximity of knots mar the quality and depress the sale of the lumber. Spruce boards are not adapted to nice finishing-work in building or in cabinet ware, or, indeed, in anything that requires a finish and upon which paint and varnish may be permanently applied, for under the influence of slight degrees of heat it sweats, exuding minute globules of gum or rosin, which are sticky and difficult to remove.

The other timber trees in southeastern Alaska, Kadiak, and Cook's inlet may be called exceptional. But one very valuable species of yellow cedar (*C. nutkanensis*) is found scattered here and there within the Alexander archipelago and on the 30-mile strip. Here this really valuable tree is found at wide intervals in small clumps, principally along shoal water-courses and fiords, attaining a much greater size than the spruce, as frequently trees are found 100 feet high, with a diameter of 5 and 6 feet. The lumber made from these is exceedingly valuable, of the very finest texture, odor, and endurance, and is highly prized by the cabinet-maker and the ship-builder.

While, therefore, we find a very large supply of timber in Alaska, such as we have described, yet it is instantly apparent that as long as the immense forests of Oregon, Washington territory, and southern British Columbia stand as they exist to-day there will be practically no market for Alaskan lumber.

The accompanying map indicates, as far as it has been ascertained, the distribution of the yellow cedar (*C. nutkanensis*) and the Sitka spruce (*Abies sitkensis*), and also the northern and western limits of the latter tree. The white birch is found throughout the region which supports the spruce—scattered or in small bodies—chiefly along the water-courses. The alder and willow are found on all the low lands, reaching far beyond the northern and western limit of the spruce. A poplar, resembling our cottonwood, attaining great size under favorable circumstances, is also found in nearly all the timbered sections of Alaska south of the Arctic circle.

To the westward of the one hundred and forty-first meridian no timber grows at an altitude higher than 1,000 feet above the level of the sea, and consequently the forests are confined entirely to valleys and plains, all mountains being bare throughout the section indicated. On Kadiak island and on the Alaska peninsula the change from a vigorous growth of spruce timber to bare hills and grassy plains is very abrupt, and is apparently unexplained by any corresponding change in soil, temperature, or general climatic conditions. A slightly-curved line, beginning at the intersection of the coast-hills of the east shore of Norton sound with the Oonalakleet river, passing across the Yukon and the Knikokvim rivers, the mouth of the Nushegak, across the Alaska peninsula, and impinging upon the north Pacific in the vicinity of Orlova bay, on Kadiak island, will serve as the western limit of spruce forest in Alaska.

With reference to quality the Alaska forest trees may be divided as follows:

1. **YELLOW CEDAR** (*Cupressus nutkanensis*).—This is one of the most valuable woods on the Pacific coast, combining a fine, close texture with great hardness, durability, and a peculiar but pleasant odor. The Russians named it "dushnik" (scented wood) on account of the last-named quality. In the immediate vicinity of Sitka, on Baranof and adjoining islands, this tree was nearly exterminated by the Russians, but on the Kehk archipelago (Koo island) and on Prince of Wales island and a few others of the Alexander archipelago, near the British Columbian frontier, considerable bodies of it can still be found, and beyond the line, in the Nass and Skeena River valleys, it is also abundant.

2. **SITKA SPRUCE** (*Abies sitkensis*).—This is the universal forest tree of Alaska, and is found of gigantic size on the islands of the Alexander archipelago and on the shores of Prince William sound. Its medium growth it appears to attain in the valleys of the Yukon and the Kuskokwim, while on the east side of Cook's inlet and on the more northern uplands it is quite stunted and dwarfed. The Sitka spruce is most closely connected with the various requirements of all Alaskan natives in their domestic economy, as its timber is used in the construction of nearly every dwelling throughout the country, and even those tribes who inhabit barren coasts far removed from the limits of coniferous trees are supplied with it through means of freshets and ocean currents. The sappy outer portion of the wood furnishes splinters and torches that light up during long months of winter the dark dwellings of interior tribes of Tinnel stock, who know not the oil-lamp of their Inuit neighbors. The same material is also used for sledge-runners on loose but crisp-frozen snow, over which iron or steel would drag with difficulty, as over deep, coarse sand. The Thlinket and the Hyda fashion their buoyant and graceful canoes, both large and small, from spruce logs, and split from them also the huge planks used in the construction of their houses. The lumber manufactured from the Sitka spruce is much less durable than the yellow cedar, very knotty, and consequently not adapted for ship-building.

3. **HEMLOCK** (*Abies mertensiana*).—Though this tree generally exceeds the spruce in size, it is of rare occurrence, much less valuable as timber, but well adapted for fuel.

4. **BALSAM FIR** (*Abies canadensis*).—This tree is found only in small, scattered bodies, and is of little value as timber, but the natives use its bark for tanning and for other purposes.

5. **SCRUB PINE** (*Pinus contorta*).—The scrub pine is found throughout the interior of Alaska in small, scattered bodies up to the highest latitudes, but it is of no value as timber.

Thus it will be seen that the forests of Alaska are altogether coniferous, as the small bodies of birch and the alder and willow thickets on the lower Yukon and Kuskokwim rivers can scarcely be considered to come under this head. Aside from the yellow cedar, which is rare, the timber wealth of Alaska consists of the Sitka spruce, which is not only abundant and large (trees of from three to four feet in diameter being quite common in southeastern Alaska and Prince William sound), but also generally accessible.

To give even an approximate estimate of the area of timbered lands in Alaska is at present impossible, in view of our incomplete knowledge of the extent of mountain ranges, which, though falling within the timber limits, must be deducted from the superficial area of forest-covering.

A few small saw-mills of exceedingly limited capacity have been erected at various points in southeastern Alaska, to supply the local demand of trading-posts and mining-camps, but finished building lumber is still largely imported even into this heavily-timbered region. In all western Alaska but one small saw-mill is known to exist, which is on Wood island, Saint Paul harbor, Kadiak. This mill was first set up to supply saw-dust for packing ice, but since the collapse of that industry its operations have been spasmodic and not worth mentioning. Lumber from Puget sound and British Columbian mills is shipped to nearly all ports in western Alaska for the use of whites and half-breeds, while the natives in their more remote settlements obtain planks and boards by the very laborious process of splitting logs with iron or ivory wedges. On the treeless isles of the Shumagin and Aleutian groups, as well as in the southern settlements of the Alaska peninsula, even fire-wood is imported from more favored sections of the territory and commands high prices.

The drift-wood washed upon the shores of Bering sea and the Arctic is of very little value as building material and cannot be worked into lumber.

On the map I have also endeavored to show approximately the extent of the tundra, or marshy plains, producing a vigorous growth of mosses, grasses, and even flowers, but resting upon a substratum of frozen soil and ice which does not thaw during the brief summers. The glaciers also have been indicated where they are definitely known to exist, but others could doubtless be found in mountain regions not yet visited.

MINERALS.

Coal is found, chiefly or wholly of a lignite composition, at a great many points throughout the southern and western coasts of Alaska and the islands thereof; and during the past season a vein was opened in the Arctic, above cape Lisburne, by Captain Hooper, of the revenue marine, who says that he mined it easily and used it with great satisfaction in making steam for his vessel. The oldest coal-mine in the country is that on Cook's inlet, near its mouth, at a place still called on the map Coal harbor. The Russians also took notice of coal at Ominga, on the

Shumagin islands, and several openings were made by them of veins here and there in the Alexander archipelago. Following the Russians our people discovered and attempted to work one or two in the Sitkan archipelago and several to the westward. The quality of all this coal located and worked for a brief experimental period was of so poor a grade that in no case has it been pronounced fit for use on steam-going vessels, being so highly charged with sulphur and other deleterious combinations. The value, however, of Captain Hooper's vein in the Arctic to the opening enterprise of steam-whaling, and for the use of the revenue marine itself, must be of very striking moment. These experiments with Alaskan coal have been exceedingly thorough and patiently wrought out at Onnga, where the most laudable, persistent, and even desperate determination has been manifested by the owners of certain ledges thereon to develop their holdings into mines of wealth. The steamers in the territory bring their own coal with them, or have it sent up by tender from British Columbia sound or California. The traders at the different posts where timber is scarce or entirely wanting use it now as their principal fuel, and it is the sole fuel on the seal islands.

In regard to the reputed findings of large-paying gold-mines and other precious minerals I can only say that, as far as is known, there is nothing of the kind in western Alaska; at least there is nothing located and worked as such, though the prospecting or searching is as active as it has been since the transfer. The surface of the country in southern Alaska being so mountainous and concealed by the timber-cloak everywhere covering it, it is of course a slow and exceedingly difficult undertaking to penetrate any distance back, up, and among the mountain valleys in search of mineral. The color of gold can be washed out of the sands of every little stream emptying into the ocean on the northwest coast, and in many places it can be found by searching in the surf-beaten beaches of the sea-coast itself. But the question immediately arises with the miner, "Will it pay?" and by that he means "Will it yield me from \$4 to \$10 a day if I work it?" Less return for his labor does not satisfy him, nor will it bring others to the places.

The gold-bearing belt of the Rocky Mountain divide, so familiar to us as it crops out all through our states and territories, reaches undoubtedly to the Arctic sea itself. But it must be borne in mind that with every degree of northern latitude as we ascend we cut off working-days, as the icy grasp of frost checks the flow of water and shuts down the mills, so that when this gold-bearing belt crosses into our Alaskan boundary far back, and concealed from the sea by the towering summits of the coast range, we find it practically barred out from our miners unless they shall find the free gold and a rich quartz in unwonted abundance.

The quartz-mines in the immediate vicinity of Sitka have been abandoned as worthless under present conditions, the output officially reported for the year ending June 30, 1880, being but a trifle over \$6,000, with an expenditure of nearly four times that sum. Since 1880, however, much surface-gold has been found in the mountains on Gastineau channel, between Douglas island and the mainland, chiefly from the decomposed croppings of ledges. These discoveries have attracted several thousand miners and their followers, and a thriving town, now named Juneau City, has sprung up, claiming very bright prospects in spite of the long interval of enforced idleness between December and April. The never-satisfied prospector has already left these diggings behind and pushed on from the head of Lynn canal across the divide separating the headwaters of the Yukon from the north Pacific; but whatever discoveries have been made there are located in British Columbia, and consequently without the pale of this report.

The Cassiar diggings, which have during the last five or six years given quite an impetus to Alaskan travel by fort Wrangell and Sitka, are situated in the territory or dominion of British Columbia, far up the Stikine river, and away from our limits. They have been failing lately, and the last season's work has been one of sore disappointment and discouragement to the few miners who still hold on.

In Norton sound, within the deep land-locked shoals of Golovin bay, there are reputed to be leads of silver ore and graphite. Cinnabar has also been discovered on the Kuskokwim, and assays made of the ore in San Francisco indicate a very valuable discovery there. Other than these minute circumstances we have no better evidence of the mineral wealth of Alaska to offer at this writing, unless we refer to the old legend and partial corroboration of it in regard to the presence of an extensive deposit of copper *in situ* on the banks of the Atnah or Copper river. There is also a mine opened, but just at present not worked, on Prince of Wales island. This little mine, however, we might say is owned by British Columbians, who say that they are barred out from their legitimate home market on account of the Dominion tariff; hence they are idle.

In connection with the discussion of the mineral resources of Alaska I insert here a translation of the report rendered by Lieutenant Doroshin, who was intrusted by the Russian-American Company with an examination of the gold-bearing deposits on the Kenai peninsula. Doroshin has frequently been accused of suppressing the results of his explorations in order to please the Russian-American Company, but from his report and private letters on the same subject it would seem that such was not the case. He wrote as follows:

In the year 1850 I was ordered to the gulf of Kenai (Cook's inlet) in order to investigate the indications of gold first discovered by me in 1848, during my first visit to that neighborhood. I left Sitka on the 1st of May and returned on the 4th of October. During this period the laborers under my command were at work only forty-nine days, the remainder of the time being spent in excursions to Nuchek, and Ochek islands, and Voskressensky bay, and also in the laborious ascent of the river Ka-ktau, and the tedious transportation of provisions and implements on the backs of men.

In 1851 I left Sitka on the 8th of May and returned on the 30th of October, calling at Nuchek and Saint Paul harbor (Kadiak Island). The working-days during this summer numbered sixty-six, much time being wasted in the transportation of provisions and tools. The working force during this season was the same as the last—twelve men.

Under these circumstances my prospecting was confined to (1) the valley of the creek Tsulitun, emptying into the lake Kastudilin, the head of the river Ka-ktau; (2) the valley of the creek Taslikh-tuu, with its tributary ravines, and (3) the valley of the creek Chum-ktau, with several lateral ravines. The streams Taslikh-tuu and Chum-ktau empty into the Skiliankh river, connecting the lakes Skilianna and Kastndilin.

Nearly everywhere in these localities gold was found, but nowhere in a larger quantity than ~~one~~ of the dirt, or 16 grains of gold to 1 pood (36 pounds) of dirt.

Though the results of my two years' exploration of the Kenai mountains were thus insignificant, they may be the foundation for more extensive search of the gold-bearing strata. Aside from the valley of the Tsulitun, where I could not complete my investigations on account of a forest fire, only two other valleys, with their tributary ravines, were examined, and consequently only a small surface of the mountainous Kenai peninsula has been touched, while nothing has been done in the main mountain ranges of which the Kenai chain is only a branch.

In the following year (1852) Doroshin wrote to Professor G. A. Gosse:

The small result of my labors has cooled the ardor of the chief manager of the colonies for gold-seeking. I do not cease to hope, however, that later some other engineer will be more fortunate in the path pointed out by me, with better means than were at my disposal; in that case, of course, nobody will think of him who first found gold where there were no ancient diggings—where no grains of gold were found in the crop of a grouse [referring to an incident of gold-discovery in Siberia], and where the natives have not even a name for the precious metal.

In November, 1855, Doroshin wrote to General Helmerson, member of the Imperial Academy:

Last summer I have passed among the mountains of the Kenai peninsula, where I had discovered traces of gold as early as 1848. In that year I became convinced that the alluvial sands of the site of the Rédoute Saint Nicholas are auriferous. When we find gold in such localities there must be deposits of auriferous ores or sands somewhere. This reasoning and the peculiar combination of clay and diorite on the upper Ka-ktau induced me to explore its headwaters. We found gold at the outset, and as we advanced up the valley it became evident that coarser particles of gold took the place of the at first barely visible scales.

AGRICULTURE.

I now pass to the agricultural and pastoral resources of Alaska. So much has been said upon this topic, of frantic declamation on one hand and indignant remonstrance on the other, that I shall be very cautious in my presentation of what I know to be facts.

In the first place, let me preface my remarks with the statement that the cereal crops cannot be grown in Alaska; this has been settled by numberless patient and repeated tests in the most favored localities. Also, that the fruit trees and the small fruits of our gardens here, as we grow them and recognize them (unless it be the strawberry and the cranberry), cannot be cultivated successfully up there. But these people do have in Alaska quite an abundance of indigenous, hardy shrub fruits, such as I have specified elsewhere. The statement made by certain high authority that wild apples are indigenous and perfect their fruit at Sitka is a mere figure of speech, but the other half of the assertion, that wild roses grow there, is true; and for that matter the wild rose blossoms with a rosy flush and the suggestion of perennial flowering up the Yukon, while the violets, the gaily-colored pea, and indeed nearly 200 species of lovely blossoming annuals and perennials are found everywhere on prairie and forest land, on the bare hills of the Aleutian islands, and covering the great moor and tundra of Alaska.

But taking up the subject of the vegetable garden, it is found that there are localities in Alaska where for the last eighty years or even more up to the present date good potatoes have been raised, though I should say perhaps that the raising of these tubers is not a certain success year after year except at one or two points within the Alexander archipelago, namely, at the mouth of the Stikine river, at fort Wrangell, and on Prince of Wales island. The potato grounds of Alaska, however, can with due care and diligence be made to furnish in the Alexander archipelago, in Cook's inlet, at Kadiak island and islets contiguous, and at Bristol bay a positive source of food-supply to the inhabitants. It is not generally known that on Afognak island there are nearly 100 acres of land dug up in patches here and there which are planted by the inhabitants, and from which they gather an annual harvest of potatoes and turnips; but there are no fields spread out, squared up, and plowed anywhere in Alaska. The little openings in the forest or the cleared sides of a gently-sloping declivity in sheltered situations are taken up by the people, who turn out with rude spades of their own manufacture, principally, for the purpose of subjugating and overturning the sod. Many of the gardens, noticeably those at the Kadiak village, are close by the settlement, while others are at some distance.

The potato crop at Kadiak in 1850 was a total failure; and this happens at intervals of from four to six years. The winter preceding the planting in 1850 was an unusually cold and protracted one, and the season, short at the best, was cut off by unbroken early frosts during September and the latter part of August. The usual growing season, however, opens early in June, from the 1st to the 10th; and the potatoes are planted in May, coming up and growing freely until October, when they are harvested. This growth of potatoes, fairly established and well defined, presents the only firm and tangible evidence of agricultural capacity within the limits of Alaska. The turnip grows and flourishes wherever the potato succeeds.

On Wood island, Kadiak harbor, during a number of years past, horses have been kept to perform certain labor in connection with a mysterious ice company, and for the use of these horses a field of 12 acres of oats is regularly sown; growing up, frequently heading out, but never ripening. This, however, is a secondary object with the planters, who cut the green crop for haying purposes.

There have been repeated attempts to raise stock cattle, sheep, and hogs in large herds within the borders of Alaska. The subject is one in which the Russians first naturally took a deep interest, for they were fond of good living, and were as desirous as any people could be to have the best of beef or mutton and the sweetest pork on their tables. They brought over hardy selections from the Siberian stock, placing the cattle at almost every point of importance for trial. The result after years of patient and persistent attention was that the herds on Kadiak island threw the best and became of real service in assisting to maintain the settlement. Here there is a very fine ranging-ground for pasture, and in the summer there is the greatest abundance of nutritious grasses, but when the storms of October, freighted with snow, accompanied by cold and piercing gales, arrive and hold their own until the following May, the sleek, fat herd of September becomes very much worn and emaciated in June. It has given its owner an undue amount of trouble to shelter and feed; hay, however, suitable for cattle, or at least to keep cattle alive, can be cut in almost any quantities desired for that purpose, but the stress of weather alone, even with abundance of this feed, depresses as it were and enfeebles the vitality of the stock so that the herds on Kadiak island have never increased to anything approximating a stock-grower's drove, rarely exceeding 15 or 20 head at the most. Notable examples of small flocks of sheep which have been brought up since the transfer and turned out at Oonalashka, Ounga, and elsewhere have done well. The mutton of the Alaskan sheep when it is rolling in its own fat, as it were, is pronounced by epicures to be very fine. But the severe winters, which are not so cold as protracted, when the weather is so violent that the animals have to huddle for weeks in some dark low shelter, cause a sweating or heating of their wool, which is detached and falls off, greatly enfeebling and emaciating them by spring. The practice of the traders at some places now is to bring beef cattle up in the spring from San Francisco, turn them out into the grazing-grounds on the Aleutian islands, Kadiak, and even to the north, where they speedily round out and flesh up into the very finest beefes by the middle or end of October, when they are slaughtered. Some ludicrous instances occur in this connection when Texas cattle are disembarked in these unwonted nooks, where they charge from the gangway of the vessel up through the native settlements as though possessed of an evil spirit, while the natives dive into their barabaras with remarkable celerity and activity, peeping thence at intervals in anticipation of some fearful crisis. The animals at once repair to the solitudes of the mountain recesses of the interior, away from the settlements, where they remain undisturbed until they are hunted and shot by the traders.

The Russians familiarized some of these natives with horses as well as cattle; but a great sensation remained in store for these people after the transfer of the territory, when mules were taken up there by the soldiers under the mistaken notion that they were going to be used in going about and over the country. These animals were a source of profound astonishment to the natives, and the mules manifested toward them an exceedingly vindictive and aggressive disposition, always charging, with ears laid back, and threatened uprising of the heels, upon the luckless savages chancing to cross their feeding-grounds, the warriors turning in swift, tumultuous flight from the advance of the unknown quadrupeds when they would have faced any number of bears without moving a muscle of their countenances.

Mules and horses, however, have no economic value here, there being no service for them on land. A little work is done with profit on the seal islands by mule teams, and these, perhaps, are the only draught or saddle animals that serve any useful purpose in the territory, with the exception of those at Wood island, before mentioned.

With regard to the raising of hogs, the propensity of these creatures to devour earrion on the sea-beach bars them of much interest, and they are not encouraged anywhere. The same difficulties as specified above, however, occur in feeding and caring for them during the winter.

I feel fully warranted in saying that the extended coast islands and mainland of Alaska will not support any considerable number of our people as agriculturists, but it is also equally apparent that the existence of those who are living and who will always live in the territory can be softened in many of its asperities by better attention to the development of the resources which are latent in the soil at many favored localities, notably at Bristol bay, Kadiak, Cook's inlet, and the Sitkau archipelago. There is a singular indifference, with a growing disinclination of the people themselves to labor in this direction. In the times of the old Russian rule there were regular orders and regular squads of soldiery assigned to this purpose every year, and the old retired and patient colonial citizens were obliged by the terms of their indenture with the company to devote themselves wholly to agriculture. Now of course they are free to choose between the profits of hunting and the smaller gains of farming, and they naturally drop the latter and rally to the former. It will thus be seen that the subject of agricultural resources in Alaska is not a new agitation, and the result of American thought and industry; and it will be found that those points located by the Russians eighty years ago as most suitable for their potatoes and other garden relishes, such as radishes and turnips, are the best to-day.

BUSINESS STATISTICS.

Owing to peculiar local circumstances, and the nature of the traffic carried on in Alaska to obtain furs and fish, it is exceedingly difficult to arrive at an even approximately correct estimate of the volume of importations of provisions and dry goods. As an example of this I may cite the discrepancy existing between the sums obtained from the custom-house of San Francisco and those furnished by firms engaged in business in the country. At the San Francisco custom-house the books indicate shipments of provisions to Alaska from that port in the following quantities: Flour, 801,508 pounds, or not much over 3,000 barrels; hard bread, 3,403 cases; tea, 823 chests of 52 pounds each; sugar, 782 barrels and 2,463 half-barrels; and for the same period the books of two San Francisco firms trading in Alaska show shipments of over 5,000 barrels of flour and other provisions in proportion. At some points the consumption of imported provisions, such as flour, hard bread, tea, and sugar, is extraordinarily large, and this is especially the case in regions inhabited by the prosperous sea-otter hunters and on the Pribylof islands, where the native sealers have large incomes, and the consumption of flour amounts to a barrel per annum for each man, woman, and child, more than the average in civilized communities. It is reported by traders that the demand for flour and hard bread increases annually, even among the savage tribes of the interior. The demand for tea, also, is steadily gaining, and the consumption of sugar is universal wherever it can be carried by the traders, but is especially large in those sections of Alaska—especially in the southeastern division—where the creoles and natives understand the manufacture of alcohol from sugar and molasses. Including the southeastern division, which is supplied chiefly from Portland, Oregon, and British Columbia, the annual shipment of flour to Alaska may be estimated at not less than 10,000 barrels, or a barrel for every three individuals of its population. If to this are added 5,000 or 6,000 cases of hard bread, 1,200 chests of tea, and 2,500 barrels of sugar, it is seen that the trade with Alaska in these staples alone is assuming considerable proportions. The shipments of tobacco aggregated from 15,000 to 20,000 pounds. Of the value of the dry goods it is impossible to make an estimate, but it is safe to assume that it does not equal that of groceries or provisions.

From the above it would appear that Alaska, with its savage population of over 30,000, represents a larger volume of trade than any other portion of the United States inhabited by uncivilized tribes, even without reference to such mineral wealth as has been or may yet be developed within its limits, or to the net revenue derived by the government above all its expenditure for Alaska from the lease of the fur-seal reservation on the Pribylof islands.

The statistics relating to Alaska contained in the reports on commerce and navigation furnished by the treasury department are of a very unsatisfactory character, as a few extracts from these documents will serve to demonstrate. During the last year of Russian rule in Alaska we find the imports from Russian America to the United States for the year ending June 30, 1866, valued at \$39,544, while the exports to Russian America were \$104,315, of which \$81,609 covered domestic produce. In the year ending June 30, 1868, the first year of American occupation, the total shipments to Alaska were valued at \$56,067. This represents the period covering the first rush of business men into the newly-acquired country. During the years following this period both imports and exports apparently increased in volume, reaching the figures of \$180,000 and \$200,000 in value; but looking at the itemized list of shipments it is easily discovered that this trade is in transit from British Columbia, through the American port of Wrangell, to the Cassiar mines in British Columbia, the items showing large shipments of grain, mules, cattle, flour, hard bread, and groceries among the exports of Alaska, articles which should, of course, have been placed under the head of transit trade. All these successive reports evidently refer only to the shipments to and from Alaska through the nearest custom-houses of Port Townsend, Washington territory, and Portland, Oregon, the vast trade of San Francisco with all western Alaska not being considered at all. The statistics of immigration contained in the same treasury reports may mislead, as they simply record the transit of miners and traders through Alaska from one point in British Columbia to mining camps in another section of that country. By far the largest portion of Alaska is removed from all communication with Sitka.

The shipping statistics derived from the same reports represent chiefly the shipping of the southeastern division. One reason for this state of affairs lies in the fact that the returns from the western ports of entry at Kadiak and Oonalashka can be forwarded to the collector at Sitka only by the sailing-vessels of fishermen and traders via San Francisco, and it often happens that these documents are delayed for months and even years.

As an instance of the deficiency of the shipping statistics I may mention that while the report of 1880 gives the number of sailing-vessels registered as seven, aggregating 133 tons, in the same year there were registered at the port of Kadiak alone eleven sailing-vessels, aggregating 175 tons in capacity.

CHAPTER III.—GEOGRAPHY AND TOPOGRAPHY.

THE MAP OF ALASKA.

The fact that the new map of Alaska published with this report differs essentially in many of its features from all the maps which have previously been published necessitates a few words explanatory of the methods adopted in compiling, of the reasons for the selection of authorities, and for changing the outlines of certain portions of the coast.

The southeastern section of Alaska, from the southern boundary to cape Spence, comprising the islands of the Alexander archipelago, has been represented in accordance with the survey under the auspices of the British admiralty, corrected to date by Commanders Beardslee and Glass, United States navy, and assistant William H. Dall, United States coast survey. In the topography of the section of the mainland forming the water-shed between the Chilkat and Yukon rivers, or rather between the Pacific and Bering Sea drainage systems, the late discoveries of the explorer Krause, of the Bremen Geographical Society, have been inserted, and the route to the eastern and western Kussoa lakes (the real heads of the Yukon) has been indicated.

The changes in Lynn canal, or Chilkat inlet, and to the north of Cross sound are quite remarkable. The waters of Glacier bay extend far to the northward, where heretofore a compact peninsula appeared on the maps and charts, while the positions of Sitka and a few other important points have also been corrected.

The intricate character of the deep-sea channels which form a net-work throughout this section leads us to the conclusion that future actual and connected surveys will probably result in essential changes of outline and in the location of hundreds of islands as yet not indicated on the map.

The boundary-line between this portion of Alaska and the British possessions has been laid down as near as possible at the uniform distance of ten marine leagues from the shore-line of the mainland from the head of Portland canal to the intersection of this line with the one hundred and forty-first meridian. The clause in the Anglo-Russian treaty of 1825, which was adopted in our treaty with Russia in 1867 as defining this boundary, states that this boundary shall be a line commencing from the southernmost point of the island called Prince of Wales island, which point lies in the parallel of $54^{\circ} 40'$ north latitude, and between the one hundred and thirty-first and one hundred and thirty-third degrees of west longitude.

The said line shall ascend to the north, along the channel called Portland channel, as far as the point of the continent where it strikes the fifty-sixth degree of north latitude. From this last-mentioned point the line of demarcation shall follow the summit of the mountains situated parallel to the coast as far as the point of intersection of the one hundred and forty-first degree of west longitude, and finally from the said point of intersection the said meridian line of the one hundred and forty-first degree in its prolongation as far as the Frozen ocean; with reference to the line laid down in this article it is understood, first, that the island called Prince of Wales island shall belong to Russia [now by cession to the United States]; second, that whenever the summit of the mountains which extend in a direction parallel to the coast from the fifty-sixth degree of north latitude to the point of intersection of the one hundred and forty-first degree of west longitude shall prove to be at a distance of more than ten marine leagues from the ocean limit between the British possessions and the line of coast which is to belong to Russia, as above mentioned [to the United States by cession], shall be formed by a line parallel to the winding of the coast, and which shall never exceed the distance of ten marine leagues therefrom.

We have absolutely no data for locating the summits of the chain of mountains "running parallel with the coast"; it is not even certain that there is such a connected chain, and, consequently, it has been thought best for the purposes of this map to run the boundary in conformity with the last paragraph in the clause of the treaty mentioned, at a distance of "ten marine leagues from the sea-shore of the mainland", in expectation of a future settlement of this altogether too indefinite line by treaty or convention between the United States and the British government.

A survey with a view of locating the boundary in accordance with the obtuse wording of the treaty would be altogether too costly, but a straight line between certain easily-defined points agreed upon by mutual consent would solve a difficulty which promises to arise in the near future, owing to the discovery of valuable mineral deposits on the very ground placed in dispute or doubt by the old treaty.

It may be stated here that a line from the point above mentioned, on the fifty-sixth parallel, to the intersection of the sixty-fifth parallel with the one hundred and forty-first meridian would nearly follow the present line in southeastern Alaska, while it would give to the United States one of the head branches of the Yukon river—the main artery of trade of the continental portion of Alaska—which is now crossed by the boundary at a point considerably below the head of steam navigation.

The coast-line from cape Spence northward to Mount Saint Elias has been drawn in accordance with the coast-survey chart of the Mount Saint Elias alpine region from observations and triangulations of assistant William H. Dall, who discovered important errors in the vicinity of Dry bay and at other points. Minute descriptions of natives, confirmed by observations of Mr. Dall, induced me to change the contour of Iey bay. From cape Yaktag to the mouth of Copper river the old outline, based upon Tebenkof's Russian atlas, has been retained,

but the mouth of Copper river, which has heretofore been represented as a wide estuary, I found to be filled with low islands intersected by narrow, winding channels. These islands were located by magnetic bearings only. In Prince William sound the only change made consists in the relative position of the three headlands of Montague island, in accordance with my repeated personal observations. The coast-line of the sound is the same as on the coast-survey charts of this section, which are based upon the surveys of Spanish, English, and Russian explorers.

In the Kenai peninsula, the island of Kadiak, and Cook's inlet no change has been made with the exception of the location of villages or settlements in accordance with personal notes of the compiler.

The outlines of the Alaska peninsula are essentially the same as in all earlier maps based upon the surveys of Lütke, Sarychef, and others, with the exception of a few corrections in the Shumagin group of islands, which were furnished by the United States coast and geodetic survey.

In the interior of the peninsula my observations enabled me to insert a few alterations along one of the chief portage routes from Bristol bay to Shelikhof strait by way of the Naknek river and Walker lake.

The Aleutian islands are represented on this map in accordance with the charts of Sarychef and Tebenkof, with corrections to date by assistant William H. Dall and party, of the coast and geodetic survey.

The coast-line from Bristol bay to cape Newenham is essentially the same as that found on the coast-survey map of 1869, which latter is identical with that in Tebenkof's atlas.

In the interior of this section some details showing portage routes and settlements have been inserted from personal notes of the compiler.

The course of the Knuskokvim river has been retained as represented on the coast-survey map of 1869, with the exception of a portion of its headwaters corrected from Indian maps and the descriptions of traders.

The delta between the Knuskokvim and the Yukon mouths presents several striking and entirely new features, for which I am indebted to the discoveries of Mr. E. W. Nelson, United States signal service. Some years ago I was informed that the two deep indentations heretofore represented on all maps of Alaska to the north and south of cape Vancouver do not in reality exist, and happily Mr. Nelson was in a position to confirm this report, and to furnish the real outline of the coast as laid down by magnetic bearings and close estimate of distances from points known and established. That gentleman, during a sledge journey performed in the winter of 1878-'79, struck the coast of Bering sea at a point a little to the southward of cape Rumiantzof, and, taking his departure from that well-established point, followed the coast to cape Vancouver, another known point, and thence along the shore into the mouth of the Kuskokvimi, finally cutting across the center of the delta to the banks of the Yukon. This journey resulted in the important discovery that cape Vancouver is located on an island formed by two wide channels uniting in a large inlet far inland. This island was named after the discoverer, while the name of Baird was bestowed upon the inlet above referred to and that of Hazen upon the bay to the north of Nelson island. (a)

Another important point confirmed by Mr. Nelson during his journey is that the central portion of this delta, where the compiler of the coast-survey map of 1869 located a chain of mountains, consists in reality of a vast system of lakes connected by shallow and intricate channels.

The course of the Yukon is laid down on this map in accordance with the survey of Captain Charles W. Raymond, United States engineers, who ascended the river to ascertain the position of fort Yukon, which he found to be considerably to the westward of its location on the maps heretofore published.

For the course of the river between fort Yukon and the British boundary I am indebted to magnetic bearings furnished by traders traveling on the steamer which ascends the Yukon to fort Reliance, an American trading-station. These bearings, confirmed by Indian maps and the descriptions of various intelligent individuals, when brought into connection with the change in the position of fort Yukon bring fort Reliance within our possessions, though heretofore it was supposed to be on British territory, owing to deductions made from the erroneous location of fort Yukon.

The course of the Tannah river and that of the portage routes connecting this little-known stream with the Yukon on the east and the Kuskokvim on the west are represented in accordance with Indian maps and a careful comparison of statements of many traders and intelligent natives; and a change has been made in the course of the Innoko, another tributary of the Yukon, in accordance with notes of a reconnaissance made by Mr. E. W. Nelson.

The positions of Saint Michael and Stuart islands, in Norton sound have been corrected in accordance with observations of Lieutenant Hand, United States revenue marine, and Lieutenant Danenlower, United States navy, of the Jeannette expedition, who determined the same to be considerably more to the westward. A slight difference exists between the observations of these two officers, but as the naval officer seems to have had better instruments, more leisure, and more favorable atmospheric conditions, I have accepted his location of Saint Michael.

In comparing the authorities for the eastern coast of Norton sound it was discovered that the charts of the United States hydrographic office contained an important error. A draughtsman at that office in first laying down this coast-line had made use of chart No. 2 of Tebenkof's atlas, on which the meridian lines were drawn at the half degree, a mistake which remained undiscovered by the hydrographic office, and the error resulting has been perpetuated in each succeeding issue of its charts of Bering sea.

^a In honor of Professor Spencer F. Baird and General William B. Hazen, under whose auspices Mr. Nelson performed his labors.

In the coast-line of northern Alaska from Norton sound to Bering strait and along the Arctic shore the charts of the British admiralty and the United States hydrographic office in their latest issues have been closely followed, with the addition of some details furnished by Captain C. L. Hooper, United States revenue marine, and E. W. Nelson, United States signal service.

In running the boundary between the Alaskan and Siberian coasts a slight variation from charts heretofore published was made necessary, in accordance with the wording of the treaty, at a point where this line passes between Saint Lawrence island and cape Chukotsk.

Wrangell island is represented in accordance with the sketch of Lieutenant Berry, United States navy, published with the latest chart of that region issued by the United States hydrographic office. The point where Captain C. L. Hooper, of the revenue marine, landed and took possession in the name of the United States was named "Hooper's cairn" on Lieutenant Berry's sketch, but the name had been omitted by the draughtsmen of the hydrographic office. As an act of justice to the first man who set foot on this Arctic island I have restored it. The latest hydrographic charts of the Arctic adopt Professor Nordenskiöld's coast-line of Siberia to East cape, but with the assistance of the observations made by Captain Hooper during the summer of 1881 I have been enabled to make important corrections between cape Serdze Kamen and cape North. Professor Nordenskiöld passed along this section of the coast late in the season with thick and unfavorable weather, while Captain Hooper was favored with the finest atmospheric conditions and double observations of both midday and midnight sun.

The contour of East cape of Siberia has been changed in accordance with a careful sketch furnished by the brothers Krause, of the Bremen Geographical Society, together with other details, the result of a boat journey along the east coast of the Chukchee peninsula. This change in contour, though radical, is based solely upon the discovery that what has been heretofore represented as an island on the north side of the "neck" of East cape is really a sand-spit separating a lake containing many islands from the sea. In this connection it may be stated that many of the names of villages collected by the brothers Krause are identical with those of a list furnished by a Cossack explorer at the end of the seventeenth century.

A careful comparison of all the accessible authorities during the slow process of compilation naturally led to the discovery of errors in many of the maps and charts consulted, but throughout this work it has been the experience of the compiler that the Russian atlas of Tebenkov, and to a certain extent the charts of Sarychef, furnish the most reliable material—in fact they are the basis of all maps of this vast territory. Wherever a point or coastline has been laid down as definitely known by Tebenkov, it may be relied upon as true in contour and latitudinal position. A curious instance confirming this assertion presents itself in the case of the southernmost outlet of the great Yukon river—the Kashunok—indicated as a broad arm on "chart 2" of Tebenkov's atlas. Mr. William H. Dall, in compiling his map for the United States coast survey in 1869, omitted this feature, but examination proved the Russian geographer to be correct. The outlet exists, but is less broad than indicated by Tebenkov.

The large numbers of new names of settlements inserted in this map lie chiefly along the line of my personal exploration.

In the absence of all connected surveys of Alaska absolute correctness cannot be claimed for any map of that country, but in presenting the result of my labors to the public I look upon this map as embodying new information and as an additional guide for future labors in the same direction.

THE GEOGRAPHY AND TOPOGRAPHY OF ALASKA.

The coast of Alaska commences in the south, at latitude $54^{\circ} 40'$, and sweeps in a long curve to the northward and westward for 550 miles to Prince William sound, and thence southward and westward over 700 miles to the extremity of the Alaska peninsula, whence the Aleutian chain of islands stretches toward the coast of Asia in another long curve, with its convexity to the south. The highest latitude of that great bend of the main coastline north of Sitka is $60^{\circ} 30'$, while the southern point of the Alaska peninsula is in latitude 55° . From the strait of Issanakh, which separates the peninsula from the island of Oonimak with its great volcanic peaks covered with eternal snow, the Aleutian islands sweep in a grand curve to the southward and westward for 750 miles, reaching a latitude of $51^{\circ} 30'$ in the meridian of Greenwich, and thence northward and westward 125 miles to Attoo, the western extremity of the United States. The Aleutian islands are certainly the summits of a continuation of the main Alaskan range of mountains which sweeps along the Alaskan coast from the boundary around the head of Prince William sound and Cook's inlet and down the Alaska peninsula. The whole chain, at least that part of it west of Mount Saint Elias, is marked by many volcanic peaks, several of them still active. The mountains of the mainland between Cross sound, the northern line of the Alexander archipelago, and the east shore of the Kenai peninsula are very high, Mount Saint Elias measuring over 18,000 feet, Mounts Crillon and Fairweather being but little less in height. The peaks of the Chugach alps encircling the north side of Prince William sound loom up grandly under their covering of eternal snow; and on the west side of Cook's inlet are found mountains reaching an elevation of from 10,000 to 12,000 feet. From the Ilyamna volcano down the peninsula the peaks gradually decrease in height: Shishaldin, on Oonimak island, measuring nearly 9,000 feet; the Makushin, on Oonalashka, over 5,000; and the remaining mountains of the chain to the westward varying from 3,000 to 6,000 feet in height. The north side

of the Aliaska peninsula presents a low and sandy shore. The great extent of water lying within the environs of the coast between the southern boundary and the southern end of the Kadiak archipelago has been named by the United States coast survey the gulf of Alaska. North of the Aliaska peninsula the coast has a general northerly and westerly direction to Bering strait, indented by three large bays or sounds—Bristol bay, the Kuskokwim estuary, and Norton sound. In the Arctic the coast of Alaska turns eastward with the sole interruption of Kotzebue sound, in latitude 66° north. The island of Numinak, the Pribylوف group, and Saint Lawrence and Saint Matthew islands are situated off the coast of Bering sea.

From Dixon sound and Portland canal, in latitude $54^{\circ} 40'$, to the Chilkat inlet and Cross sound, in latitude $59^{\circ} 40'$, the mainland is shielded from the sea by a vast archipelago of islands, large and small, most of them being mountainous throughout, and all covered with a dense growth of spruce, hemlock, and cedar. The dimensions of this great accumulation of islands average about 75 miles east and west and 260 miles northwest and southeast, divided by hundreds of navigable passages. The number of these islands is given as 1,100, divided as follows: Prince of Wales island and those closely surrounding it number 135; from Portland canal to cape Caamaño there are 134; from cape Caamaño to the middle of the Stakhin, 77; between Chatham, Frederiek, and Stakhin straits, 350; Admiralty island and those surrounding it number 118; Baranof and adjacent islands, 138; Chatham strait north of Admiralty island contains 29; and Chichagof and islands adjacent to Cross sound, 109. The fiords of Norway and the "seheres" of Finland sink into insignificance before the great dimensions of these straits and sounds. Among the larger passages dividing this archipelago Chatham strait, named by Vancouver, is the most important, stretching in a straight line 195 miles in a northerly direction from cape Ommaney, in latitude $56^{\circ} 10'$, to the mouth of Chilkat inlet, in latitude $59^{\circ} 40'$, with an average width of seven or eight miles and a great depth of water. Several large passages connect this water-way with other straits to the eastward and also with the sea north of Sitka. Of the latter, one called "Peril" or "Destruction" strait leads directly to Sitka, while the other consists of Cross sound or Iey strait, about 75 miles north of Sitka. The Alexander archipelago embraces a shore-line of nearly 8,000 statute miles.

The outline of this section of Alaska is naturally a very irregular one on account of the numerous straits, bays, and islands. The south coast, facing upon Dixon sound and Portland canal and extending 80 miles from the latter westward to cape Kaigan, exhibits numerous headlands and broken shore, steep hills, and mountains covered with dense forest to their summits. The mountains attain an elevation of from 2,000 to 3,000 feet, with scarcely a valley between them.

The extensive eastern arm of Dixon sound, called Portland canal by Vancouver, forms the southeastern dividing line between British Columbia and Alaska. It begins in latitude $54^{\circ} 41'$, and its northern head is in latitude $55^{\circ} 45'$ and longitude $149^{\circ} 54'$. The inlet is but a little over a mile in width.

On the island of Tongass, situated a little to the westward of the mouth of Portland canal, a military post was established soon after the transfer of Alaska to the United States, but it has since been abandoned; a few of the buildings, however, still remain, surrounded by the easternmost native villages of all Alaska. Cape Fox, the southerly extremity of the mainland within the American territory, is situated in latitude $54^{\circ} 45' 30''$. From the north side of Dixon sound several large passages extend to the northward: the Revilla Gigedo channel, or Tongass narrows, between cape Fox and cape Northumberland; Clarence strait, between cape Northumberland and cape Kaigan; and Cordova bay or strait, between cape Chaeon and cape Kaigan, having connection with Bucarelli sound. The largest of these passages, Clarence sound, runs in a northwesterly direction for 120 miles, with an average width of from 15 to 20 miles, and finally mingle its waters with those of Chatham strait, its western shore being formed by Prince of Wales' island. Strange to say, this large island, which has been known to the maritime nations of the globe for over a hundred years, still remains unsurveyed, and has been variously named an island and an archipelago, and accounts of natives report numerous navigable passages cutting through it here and there. From the eastern side of Clarence strait great arms penetrate in a general northeasterly direction until they reach the base of the coast mountains; their waters are navigable, the shores bold and covered with timber, and the whole forms an intricacy of inland navigation difficult to describe in detail, and a chart affords but a faint idea of its perplexing grandeur. There seems to be no harbor on the mainland in this vicinity. The port of Wrangell is located on an island of the same name a short distance from the mouth of the Stakhin river, in latitude $56^{\circ} 31'$ and longitude $132^{\circ} 23'$. The Russians had a small stockaded station here called Rédoute Saint Dionys, which was subsequently leased to the Hudson Bay Company.

After the acquisition of the country by the United States a military post was established here, but was finally abandoned in 1877. The Stakhin is the largest river of southeastern Alaska, but lies within our boundaries for a distance of only 30 miles in an air-line from its mouth. The Dominion government claims a boundary even nearer to the sea-coast, including the spot where British ocean steamers land cargoes and passengers, and the advent of the British here has destroyed the once large transit trade of Wrangell. The interior of the country adjoining this river is broken into a succession of sharply-defined mountain ranges separated by narrow, deep valleys similar to those between the islands of the coast.

The topography of the Alexander archipelago is the type of that of the interior within our boundaries. Beyond, on the upper river, within the British possessions, there is a large rolling plateau stretching between the coast range

in the west and the prolongation of the Rocky mountains in the east. Like all Alaskan rivers the Stakhin takes its head from a succession of great lakes. A number of glaciers descend from the snow-covered peaks on both sides of the river down to its banks. The largest of these is situated on the right or west bank with its face on the river 4 or 5 miles in width, and its length is said to be over 60 miles. The Indians relate that in ancient times this glacier extended across the river, forming an icy arch over the stream, but in course of time the spring freshets washed away the obstruction. Some officers of the Russian navy attempted to explore this huge glacier to its head, but they probably fell into one of the numerous chasms, as they were never heard from again.

One wide passage from the mouth of the Stakhin to the ocean, called Stakhin strait, runs westward between Prince of Wales island on the south and the Kehk archipelago on the north, reaching the sea between cape Ommaney on Baranof island and Coronation island on the south. Another passage, Prince Frederick sound, runs from the mouth of the Stakhin northward along the coast of the mainland, and then westward between Admiralty island and the Kehk archipelago until it empties into Chatham strait. A branch of this channel, Stephens passage, runs northward between the mainland and Admiralty island until it mingles its waters with those of Chilkhat inlet. At about the middle of its course Takoo inlet opens on the east, and a little beyond this Douglas island divides the strait into two channels. This is the locality where the most promising discoveries of gold placer and quartz mines have thus far been made. Juneau City, or Harrisburg, a mining town of recent growth, is situated on the mainland opposite Douglas island. From the junction of Stephens passage, Chilkhat inlet, and Chatham strait a wide channel, called Cross sound, or Icy strait (by the Russians), opens between the mainland in the north and Chichagof or Hoonia island on the south. A large bay, not heretofore represented on any chart, was definitely located last year on the northern side of Cross sound by the officers of the United States sloops of war Jamestown and Wachaset. Glacier bay extends in a northwesterly direction from the north shore of Cross sound, between Lynn canal or Chilkhat inlet and the Pacific, for a distance of about 40 miles. About 20 miles from its mouth there is an island 5 or 6 miles in length named Willoughby island, and around the shores of the bay are five immense glaciers. The first, in the vicinity of Willoughby island, is about half a mile wide and 150 feet high; the next is about three-quarters of a mile wide and 200 feet high; the third, known among the Indians as the "great glacier", is situated at the head of the bay, and is about half a mile wide and from 200 to 300 feet high; the fourth, on the northern shore of the bay, is about half a mile wide and 150 feet high; and the fifth and smallest is about half a mile wide and 50 feet high. Nearly all the ice floating in this bay and Cross sound comes from these glaciers; the sea washes under them, honeycombs the ice by its incessant lapping, and pieces are broken off constantly. Professor John Muir, an eminent geologist of the Pacific coast, describes another huge glacier located here, as follows:

On the northern shore of Glacier bay, north of Willoughby island, there is a large inlet, from 3 to 4 miles wide at its mouth. It runs to the northward and westward 5 miles, and at its head there is an immense glacier which extends across the head of the inlet for a distance of 3 miles; 10 miles back from its face it is 10 miles wide, and near this, its greatest width, sixteen branches of the first class unite to form one immense glacier; four of the sixteen branches are each over 2 miles wide, while nearly all have tributaries; the distance from the face of the glacier to its farthest removed fountain is about 40 miles.

The port of Sitka is situated on the west coast of Baranof island, in latitude $57^{\circ} 02' 52''$, and longitude $135^{\circ} 17' 45''$.

Westward of Cross sound the coast-mountain range attains an elevation of about 18,000 or 19,000 feet, covered far down with perpetual snow, the highest peaks (Mounts Saint Elias, Fairweather, and Crillon) looming up in silent grandeur above them, visible in clear weather a distance of 150 miles at sea. From Lituya or Port des Français westward the immediate sea-coast is comparatively low, wooded ground, but closely backed by icy declivities that come down from the high mountain ranges, and at the head of Yakutat bay reach the coast land. This narrow strip of low coast, interrupted only in the vicinity of Icy bay by a succession of precipitous glaciers fronting the sea for 15 or 20 miles, extends to the mouth of Copper river. Here the sediment carried down from the mountains has been deposited for thousands of years, until a vast low delta has been formed, through which the waters of the river find their way to the sea in innumerable channels. In many places the swift current has carved large basins and lagoons out of this soft material, the whole presenting the spectacle of a perfect labyrinth of lakes and streams. The mountains rise up abruptly from the northern edge of this flat to a height of 8,000 or 9,000 feet.

Vistas of the far interior are afforded here and there by the gradually-sloping masses of glacier ice. West of the Copper river the foot of the Chugatch alps is bathed by the sea without any intervening low land, with only two or three exceptions, and these have been utilized for the location of settlements. The mountains on the northern side of Prince William sound must reach a height of 10,000 or 12,000 feet, all densely wooded up to about a height of 1,000 feet, and covered with eternal snow from their summits to within 3,000 or 4,000 feet of the sea-level. The interior of Prince William sound on the gulf of Chugach forms a basin almost entirely land-locked, being sheltered from the south by the islands of Nuchek and Moutague; but although thus surrounded on all sides by land it is by no means a calm and pleasant sheet of water to navigate, as furious gales and "woollies" sweep down the mountain sides without a moment's warning, compelling the luckless traveler in a small craft or canoe to seek the lee of one of the hundreds of islands and capes studding the coast. Immense glaciers on the northern shore

are constantly descending into the sea and shedding fragments of ice, both large and small, that are carried off by the tide in compact fields or loose masses, still more endangering navigation. The western shore of the sound, the northeast coast of the Kenai peninsula, is very much cut up into deep bays and fiords, and everywhere mountains can be seen looming up in the background with snowy peaks and ridges. The deepest indentation in this section of the coast of the peninsula is Resurrection bay, which was long years ago utilized by the Russians as a ship-yard. This bay affords the only harbor in the vicinity, though its entrance is beset with islands and the approach made difficult to sailing-vessels. From Resurrection bay in a southwesterly direction the coast is one succession of deep fiords, but, exposed as it is to the fierce easterly gales prevailing here at nearly all times of the year, it is shunned by navigators, especially because even the deepest and most extensive bays do not afford a single anchorage, so that vessels entering them to find refuge from storms would still be at the mercy of the tides.

The entrance to Cook's inlet, or the gulf of Kenai of the Russians, lies between cape Elizabeth on the southwestern extremity of the Kenai peninsula and cape Douglas, a bold promontory jutting out from the Alaska peninsula. Nearly half way between the two is a group of bleak, naked rocks, called the Barren islands, which, placed as they are in mid-channel of the tide rushing into Cook's inlet from the ocean, cause violent and irregular tidal currents very dangerous and perplexing to the navigator. During calm weather the so-called "tide-rip" will toss a craft about more violently than any sea stirred up by wind; and a sailing-vessel caught within a few miles of the Barren islands in the "tide-rip" without wind is irresistibly drawn to destruction upon the rocks.

Just above its mouth the waters of Cook's inlet widen out into the gulf of Kamishak on the west and Kuchekmak bay (called "Chugachik" on the coast-survey maps) on the east. On the east shore the mountains are not high, and contain extensive coal-veins of an inferior quality, but on the west the main Alaskan chain of mountains rears up several volcanic peaks to a considerable height, rising abruptly from the sea-coast with a narrow belt of shelving woodland intervening. North of the indentations mentioned the shores of Cook's inlet again approach each other to a distance of not over 30 miles between Anchor point on the east and Mount Isaacs on the west. From this point northward and eastward the eastern shore is low and flat, with an elevation of from 50 to 100 feet above the sea. High ridges of mountains traverse the interior and eastern side of the Kenai peninsula, but between them and the coast there is a strip of marshy tundra, wooded along the river-courses and varying from 40 to 50 miles in width. As the inlet contracts still farther, especially between the promontories of East and West Foreland, the tides increase in velocity and violence of action until they attain a speed of 8 or 9 knots with an average vertical rise and fall of 24 to 26 feet. The northeastern extremity of this vast inlet or gulf which Cook entered with the expectation of finding a northwest passage, and, being disappointed, applied to it the name of "Turnagain", equals in tidal phenomena the bay of Fundy. The flood comes in a huge "bore", with thundering noise and astonishing rapidity, and a traveler advancing with it in a canoe experiences the peculiar sensation of seeing one high bank of clay and gravel after another apparently sinking before him as he is lifted up and carried over by the impounding tide. From the mountains surrounding this branch of the inlet innumerable avalanches sweep down their rocky and wooded slopes, demolishing large sections of forest and piling up rocky débris to such an extent as to cause frequent and total changes in the aspect of the country, while the outlines of the coast undergo equally perceptible modifications from the action of the tides.

What the country north of Cook's inlet is like no civilized man can tell, as in all the years of occupation of the coast by the Caucasian race it has remained a sealed book. The Indians tell us that the rivers lead into lakes and that the lakes are connected by rivers with other lakes again, until finally the waters flow into the basins of the Tennaanah and the Yukon; but conflicting with this intermingling of the waters are stories of mountains of immense altitude visible for hundreds of miles. The natives living north of this *terra incognita* give, however, a similar description, which may be accepted until reliable explorers are enabled to penetrate this region.

On the western side of Cook's inlet the main Alaskan chain of mountains, called by Dall the Chigmit range, rises abruptly from the sea in steep ridges and peaks, the highest of the latter being the Redoute and the Ilyamna mountains, both volcanic and emitting smoke. Only at two points along this coast within the inlet does low land intervene between the mountains and the shores, at Toyonok and at Kustatan, both of which localities have been utilized by the natives for establishing settlements. Up to the height of about 1,000 feet all these mountains are densely wooded. From Kamishak gulf, situated between Mount Isaacs and cape Douglas, a portage is made over a slight depression in the ridge to the basin of the great lake Ilyamna, but on the southwestern shore of the bay the mountains rise again to a considerable height, culminating in the four peaks to the westward of cape Douglas. The last-named cape is one of the most prominent and boldest in shape of the many Alaskan promontories, jutting out as it does at a right angle for a distance of several miles into the sea, with a sudden descent of over 1,000 feet into the waves of Cook's inlet.

The same chain of mountains extends down the south coast of the peninsula, varying in height between 5,000 and 8,000 feet, with peaks much eroded by glacial and meteorological action. The numerous glaciers existing throughout the upper regions of this mountain chain do not anywhere approach the sea-coast, as is the case with Mount Saint Elias and the Chugach alps, these formations being found only at high altitudes, generally facing westward and southward.

Two distinct and continuous lines of "water-mark" can be observed along the whole of this chain, one at an altitude of 1,000 feet, the other perhaps 500 or 600 feet above. Both of these lines show the effects of the wash of the ocean for ages, together with many petrifications of mollusks and other marine life. The natural conclusion forced upon the observer is that the whole peninsula of Alaska has undergone two successive periods of elevation from volcanic action, and that this region would afford a highly interesting field of research to geologists. It is a significant fact that no glacial action is observable below the upper sea-level.

The immediate sea-coast here is cut up into innumerable fiords and coves, and lined with rocky islets.

The term "mountain chain" applied above to the elevated portion of the peninsula does not, perhaps, quite describe a very peculiar formation. The mountains or mountain groups are interrupted from time to time by depressions, but these do not at all bear the character of mountain passes, as they consist of low, marshy plains, extending entirely across the peninsula, varying very much in width. A similar formation can be found on the coast of Prince William sound, where outlying spurs of the main chain are frequently divided in the same way. The impression created in the mind of the beholder is not that of a continuous alpine chain, but rather of a series of islands, such as the Aleutians, raised by successive volcanic action until the straits between them are left dry. These depressions serve as the portage routes across the peninsula. A careful observer could easily recognize distinct islands in the mountain groups of Morshovia and of Belkovsky, connected with each other and with the Pavlosk volcanic group only by low, swampy isthmuses. Again, the mountain groups opposite the Shumagin islands, containing the Veniaminof and other volcanoes, loom up, entirely isolated by similar depressions, north and south. Between Moller and Zakharof bays the portage is made in half an hour from the waters of the north Pacific to those of Bering sea.

Other swampy passages lead through from the bays Chigmik and Kishlik to the north coast of the peninsula. Nearly all these isolated mountain sections bear a peculiar resemblance to the outward shape of the island of Unalaska, the first of the Aleutian chain that is actually separated from the peninsula, though only by a strait too shallow to be navigable. That an elevation of this region has taken place is confirmed by abundant evidence, and altogether it does not seem at all improbable that what now resembles from a distance a long mountain range was once a chain of islands.

At cape Atunshagwuk the coast of the peninsula approaches nearest to that of Kadiak island, the width of the strait here being only a little over eighteen miles.

In the vicinity of Katmai both coal and petroleum have been found, but not abundant in quantity or exceeding in quality.

The volcanic group of the Pavlosk mountains stands, as already mentioned, entirely isolated with its two craters, of which one is still active, while the other is reported to have been extinct since the year 1786. From this region also samples of coal of inferior quality have been procured. South of Pavlof bay another volcano rears its jagged crown, separated both north and south from the mountains.

In the neighborhood of Belkovsky and Morshovia several volcanic peaks can be observed, but they have not been active within historic times.

On rounding the southern extremity of the peninsula and turning northward and eastward a total change in the aspect of the coast can be observed. Low, sandy reaches and slightly elevated moorlands cover the wide interval between the mountains and the shores of Bering sea, interrupted here and there by lake-fed streams and rivers. In the vicinity of Ougachik the volcanic character of the country disappears entirely, the rock formation being altogether of granite and quartz, and pumice-stone and chalk are only washed up by the sea. All along the coast from here we encounter gray granite, hornblende, serpentine, porphyry, and sandstone, but all along, at an altitude of about 300 feet above sea-level, parallel strata containing fossil bivalves appear on the faces of bluffs. As we advance northward the interval between mountains and sea-coast widens, until in the vicinity of lakes Walker and Ilyamna swampy plateaus nearly 100 miles in width are found, dotted with many lakes.

Proceeding northward along the coast of the mainland the first deep indentation of the shore-line is Bristol bay, into which the waters of lake Ilyamna flow through the Kvichak river. From the southern extremity of the Alaska peninsula to this point Port Moller affords the only harbor for shipping, though three rivers, the Sulina, the Igagik, and the Naknek, flow into Bering sea from the mountains in the east. In the vicinity of the mouths of the last two streams the shore is high and rocky, but only few traces of volcanic action can be discovered. North of lake Ilyamna high mountains of the main Alaskan range protrude between that sheet of water and the Nushagak river, its spurs approaching nearest the coast immediately behind the Nushagak post and settlement. Other spurs of the same range of mountains and isolated groups of hills appear at long distances from each other on the coast of Bering sea, the intervals being filled up apparently with alluvial, swampy soil, not altogether level, but gently rolling. The earliest intelligent observer of this region, the Russian missionary Veniaminof, described the conformation of this section of the country as follows:

Slight elevations can be found along the whole extent of the American coast of Bering sea; they are in nearly all cases connected with the mountains in the interior. If the observer ascends to a height the country appears to him like a heaving ocean suddenly become stationary, with its waves transformed into sand and mud; these waves are now covered with vegetation, but their outlines are still very striking. In the midst of this dry sea we find occasionally high, rocky islands entirely separated from the neighboring hills.

To the westward of Nushegak the mountains first reach the coast on both sides of the bay of Kulluk. The summits of this range as seen from the lakes forming the portage between the bays of Kulluk and Nushegak are very jagged in outline, rising abruptly in almost perpendicular blocks and peaks too steep to afford lodgment for the snow. The capes and headlands jutting out from this range into the sea are frequently composed of sandstone worn into fantastic shapes by the action of the tides and changes of temperature. The next great elevated headland is cape Newenham, which forms the terminal point of a rather low range of hills running parallel with the left bank of the Kuskokvim, west of the Tulnksah river. At cape Newenham these hills culminate in two towering peaks between 2,000 and 3,000 feet in height. Between this point and cape Vancouver in the north the country on both sides of the wide estuary of the Kuskokvim is evidently of an alluvial formation, low and swampy. Both at cape Vancouver and on the island lava is found, in addition to many other evidences of volcanic origin; and the same is true of the islands further off the coast—Saint Matthew and Saint Lawrence. At cape Rumiantzof, in latitude $61^{\circ} 47'$, is another aggregation of volcanic hills rising like monntainous islands from the tundra.

The delta of the great Yukon is of course entirely alluvial, with the exception, perhaps, of the isolated hills of Kusilvak, which give indications of volcanic origin. From the northern mouth of the Yukon eastward the south coast of Norton sound consists of low, rocky hills of lava and basalt. Between the small streams of Pastolik and Pastalak are high bluffs of basalt, and the sandstone cape of Vsachaghlik looms up between 400 and 500 feet from the sea-level. The islands of Saint Michael and Stuart are comparatively recent lava formations, and contain several extinct craters. The traditions of the natives here speak of the island of Saint Michael as having risen from the ocean, and old people living in Tebenkof's time related to him that twice within their recollection the whole island was covered by the sea. From Saint Michael northward the chain of low hills composed of lava and basalt runs parallel with the coast, averaging in height from 200 to 300 feet, but at a distance of about 30 miles inland a few peaks attain a height of between 1,000 and 1,500 feet. At cape Denbigh a granite formation appears, jutting out into the sea at a right angle with the volcanic range of hills. The shores of Norton bay are low and all the alluvial deposits contain bones, tusks, and skeletons of the mammoth and mastodon. In the north coast of Norton sound we find the deep indentation of Golovin bay between two high points, cape Derby and Stony cape. The interior at the head of Golovin bay is low, and a portage route extends thence by means of lakes and rivers to Grantley harbor. From Stony cape to cape Rodney the shore is low and level, but in the interior a few high monntains are visible, covered with snow.

Off the coast, not far to the eastward of cape Rodney, there is the small island of Aziak or Sledge island. It has a circumference of only 12 miles, and is covered with large blocks of granite and basalt. The island contains a small village and is the favorite trading mart of the Innuit tribes of both continents. Still farther to the north, opposite to the entrance of Port Clarence, lies King's island, a precipitous mass of rocks some 700 or 800 feet in height, inhabited by about 100 Innuits who have carved their dwelling-places into the almost perpendicular sides of the cliffs at a height of over 50 feet from the sea-level. Only one or two narrow paths lead up from the water's edge to this northern Gibraltar, which also bears traces of volcanic origin.

Port Clarence consists of two spacious basins, the outer one sheltered from the sea by a long semi-circular tongue of land of alluvial formation. The inner basin, Grantley harbor, is surrounded by deep cliffs of slate; and from its head or eastern extremity the portage route leads to Golovin bay, as mentioned above. A chain of hills from 2,000 to 3,000 feet in height extends from Port Clarence on the coast north-northwest, terminating in cape Prince of Wales. The formation of this cape appears to be basaltic, its almost perpendicular lines being frequently interrupted by steep, narrow gulleys through which small streams find their way to the sea from the swampy table-land above. In about midchannel between cape Prince of Wales and East cape lies the Diomede group, consisting of three small islands, of which two are within the United States boundary. They all rise abruptly from the sea to a height of a few hundred feet, but are level on top.

From cape Prince of Wales eastward and northward the coast is low and swampy until we reach the vicinity of Kotzebue sound and Choris peninsula, where ridges of slate and chalk appear on the coast, generally running parallel with it. The inner shores of the great estuary of Kotzebue sound are generally low, the gravelly soil resting upon a foundation of blue clay. Occasionally this blue clay rises into bluffs of a few hundred feet in height, and the whole formation contains numerous fossil remains of the mammoth and mastodon. The few small islands within the inlet are isolated masses of granite covered in sheltered localities only with a thin coating of sphagnum vegetation.

Kotzebue sound is by far the best harbor in this section of the Arctic ocean, and is much frequented by whalers and illicit traders in liquors and arms. Proceeding hence northward we find several chains of saddle-shaped hills interrupted here and there by wide depressions, a few pyramidal peaks, and steep, isolated rocks. The general formation of these is said to be slate and clay. At cape Lisburne the cliffs rise abruptly to a height of 850 feet above sea-level. Here also slate and chalk seem to predominate, but a short distance to the eastward carboniferous veins of considerable width appear in horizontal layers along the sandstone cliffs overhanging the sea-shore. The same formation continues from here eastward to point Barrow and the eastern boundary of Alaska, receding occasionally to a distance of 10 or 15 miles from the sea-shore, and then advancing again, forming steep but low capes and headlands, the most prominent of which is point Barrow, in latitude $71^{\circ} 22'$.

To complete the description of the topographical and geographical features of continental Alaska it is necessary to follow up the basins of the Yukon and Kuskokwim rivers. The Yukon delta, as already stated above, is altogether alluvial, but between Oonalakleet, on the east shore of Norton sound, and the Yukon river there is a chain of hills consisting of granite and slate forming the water-shed between the Oonalakleet river and the Anvik, a northern tributary of the Yukon. East of the Anvik the mountains increase in height until in the vicinity of Ikogmute, where on the right bank of the river a few peaks rise to a height of 2,500 feet.

The best description extant of the topography of this river is that of Captain C. W. Raymond, United States army, which covers the distance between fort Yukon and the Russian mission at Ikogmute, just mentioned. Captain Raymond states that fort Yukon is situated in latitude $66^{\circ} 33' 47''$ and longitude $145^{\circ} 17' 47''$, at a point where the Yukon receives the waters of the Rat or Porcupine river, a large tributary emptying on the right bank and flowing from its headwaters in a general direction a little south of west. From fort Yukon to the mouth of the Chetaut river, a distance of about 200 miles, the river has a general direction about west-southwest; the country on both sides of the stream being low and level, usually consisting of sand or gravel. The average width of that portion of the river is about three-quarters of a mile, but in some places, measured across its numerous islands, it widens out to 5 or 6 miles. The current through all its passages is extremely rapid, and in many places the deepest channel does not carry more than 3 feet of water. Vegetation on the banks and islands is principally small willow and poplar, with occasional groves of spruce and birch. The principal tributaries in all this section of the river flow from the north, but none of them seem to be of much importance, and no native villages are known to exist.

From the mouth of the Chetaut river, however, the Yukon rapidly changes its character; the islands disappear, the banks rise into hills, and the stream gradually narrows into one channel, deep and rapid, until it finally rushes with great velocity through the Rampart range of hills. The bluffs composing this range rise abruptly from the water's edge, and are composed principally of a hard, greenish rock, though slate is occasionally observed, and at the principal rapids a ledge of granite crosses the river. Most of the hills are covered with groves of spruce and birch, but the trees are all small, and in many places they lie for some distance scattered in every direction, showing the small depth to which their roots descend in the frozen ground and the great force of the prevailing winds. From the Chetaut river to the Rampart rapids, a distance of some 60 miles, the Yukon flows in a direction nearly northwest, and averages about two-thirds of a mile in width, which decreases at the rapids to about 150 yards. The tributaries emptying into this section are also chiefly from the north and small in volume. The first native village met after descending from fort Yukon is situated just below the rapids. From here to Nulato, a distance of some 240 miles, the river has a general direction about west by south. There are, however, many bends, although they are less sudden and numerous than in other portions of the river. After leaving the Rampart range the river widens again and diminishes in velocity. The right bank is generally hilly and abrupt, and on the left, though the shore is generally low or flat, the hills and bluffs occasionally approach the water's edge. The average width of the channel is about three-quarters of a mile, but occasionally groups of low islands cause a widening of the river. About 50 miles below the Nuklukaiet station a range of mountains appears on the right bank. This is a succession of well-defined peaks and ridges, describing a beautiful curve of many miles, with its concavity toward the river and its flanks resting upon the water's edge. All this bank is well timbered with spruce, poplar, and birch. The principal tributaries emptying into this section of the river are as follows: From the north, the Tozikakat, the Novikakat, the Melozikakat, and the Koyukuk, and from the south the Temanah and a few smaller streams. The most important among these tributaries in size and beauty—in fact, chief among all the tributaries of the Yukon—is the Temanah, the river of the mountains. It empties into the Yukon about 30 miles below the Ramparts, and its turbid waters increase the current of the main river for a long distance. It flows apparently in a generally northwestern direction, its headwaters approaching the upper Yukon within five or six days' "Indian" travel. The mountains overhanging its upper course are said to be steep and to contain auriferous deposits or veins; and samples of surface-gold from this section have been exhibited. At the mouth of the Temanah is the great trading-ground called Nuklukaiet, where the Indians inhabiting the banks of this tributary are accustomed to congregate in the spring and meet the white traders and the few scattered bands of natives roaming over the hunting-grounds between the Yukon and the Kuskokwim. Not far east of Nulato the Koyukuk empties into the Yukon from the north, forming a route of traffic between the river and Kotzebue sound. From Nulato, situated some 50 miles south of the mission, to Andreievsky, the distance is about 350 miles, and the river has the following approximate directions: From Nulato to Anvik, south-southwest; from Anvik to the upper entrance of Chageluk slough, south-southeast; from the upper entrance of the slough to the great bend, southwest; from the great bend to Andreievsky, west by south. It is difficult to convey an idea of this portion of the river, as its numerous windings, its hundreds of islands, its bars and shoals, ever changing and shifting, baffle the traveler in his search for a navigable channel. Generally speaking, the right bank is high, exhibiting many bluffs of sand and rock much eroded by the ice torrents of the spring. The ice sometimes undermines the high banks to a distance of 20 or 30 feet, and the trees standing on the projecting tops of the banks are loosened by the action of frost and water and precipitated into the stream beneath, and thus the river goes on widening and shoaling, and floating immense quantities of drift-wood down to the sea. Sometimes the right bank rises into high hills, but the left bank is generally low and level; here and there,

however, a few isolated hills are seen standing back a mile or two from the water, and for nearly the whole distance a range of distant mountains parallel to the left shore is visible. In these mountains lie the upper branches of the great river Kuskokvim.

Sandstone and slate continue throughout this portion of the Yukon valley, but on the lower part a dark volcanic rock makes its appearance. Between a point near Andreievsky and the sea no rocks can be found anywhere along the river. The hills on the right bank are generally well covered with spruce and poplar, occasionally intermingled with a little birch, but owing to the coldness of the winter these trees seldom grow to great size. The left bank, on the other hand, is generally covered with a low thicket of willow and alder. This section of the river has few tributaries of importance, but there are many small streams, entering usually from the north. The principal streams are the Takaiak, which empties into the Yukon about 50 miles below Nulato, and the Anvik, debouching from the north about 160 miles below that point. The latter has its source in the mountain ranges which run parallel with the sea-coast; its banks are high and steep, and the very shallow waters run with great velocity. Two rivers empty into the Yukon in this vicinity from the south: the Kainuk river, about 40 miles below Nulato, and the Chageluk. About 130 miles below Nulato the Yukon separates into two branches, the main stream pursuing a southerly course, while the lesser branch, running at first a little south of east, makes finally a great bend to the south and west and enters the main river again about 60 miles below the point of separation. This lesser branch is called Chageluk slough, and into it, a few miles from its entrance, empties the Chageluk or Innoko river. A little below Andreievsky the Yukon bends abruptly to the north and runs about north by west from this point to the sea. The three principal outlets of the great river are the Ap-hun or upper, the Kvikkpuk or middle, and the Kusilvak, or lower mouth. The Ap-hun outlet is about 40 miles in length and has an average width of perhaps one-third of a mile.

Of the upper portion of the Kuskokvim river I have no authentic reports, but the natives relate that along its several branches the country is a level plain encircled on all sides by tremendous mountains. All through its upper course the current is said to be exceedingly sluggish, but at some point east of the last known settlement of Napaimute there must be a break through some natural barrier, causing a rapid descent and corresponding increase of velocity of the river. From this point to the great bend in the vicinity of Kaltktagamute the Kuskokvim runs nearly due west.

The mountains eastward of the Rédone Kalmakovskiy are high, heavily timbered around the base, and give ample evidence of the presence of mineral deposits; veins of quartz, cinnabar, and other ores being easily traced wherever the slopes and bluffs are exposed to view. Throughout the whole valley of the river the observer is struck with the wide difference existing between this formation and that of the Yukon. The bed is hard and gravelly throughout, and the vegetation on its banks more profuse and of greater variety than we find it on the larger river. About 200 miles from its mouth the Kuskokvim makes a bend to the southward, and from this point the hills disappear gradually, and at the same time the forests of alder and spruce recede from the banks until for the last 150 miles of the river course endless marshy plains extend on both sides as far as the eye can see. Between the Yukon and the Kuskokvim, west of the general portage route, there is a vast system of lakes connected by streams with both rivers, but of this region very little is known beyond the fact that it is thickly settled by people holding little intercourse with their neighbors inhabiting the river basins.

Turning now to the islands of western Alaska we begin with the Kadiak group, consisting, in addition to the large island from which it takes its name, of the islands of Shuiak, Afognak, Malina, Marmot, Spruce, Ougak, Satkhidak, Nazikak, Sitkhinak, Tugidak, and Ounganik, beside a number of others too small to mention by name. All of these islands are covered with mountains and hills, a few of them looming up between 2,000 and 3,000 feet into the regions of eternal snow. From the northern extremity of Shuiak to a line from the head of Ougak bay or Eagle harbor to Ounganik bay on the west coast the islands are heavily timbered with spruce, attaining in some localities a large size. This timber-line is quite sharply defined, though along the water-courses throughout the group a stunted growth of creeping willow exists, and a heavy carpet of grasses and moss covers the hills and mountains to the very summits. The geological formation consists chiefly of slate, porphyry, and basalt.

The bays indenting this group of islands are numerous and deep, affording the greatest facility for small fishing and trading craft. The most important at the present day is that of Saint Paul harbor, on the northern side of the gulf of Chiniak, protected from the sea by Long and Wood islands. A short distance south of Chiniak bay is Eagle harbor or Ougak bay connected by a series of lakes with another deep fiord still farther south, the bay of Killnida. This harbor is again connected, by a sheltered passage between the islands of Kadiak and Satkhidak, with the harbor or bay of Three Saints, where the first permanent settlement of the Russians on Kadiak was located. Next in order is the bay of Kagniak, a spacious basin sheltered from all but north winds. Passing around the southern end of Kadiak island we come to the large bay of Alitak, whence westward and northward a long reach of rocky coast extends without indentation or harbor of any kind until we pass the great fishing-station of Karluk river and enter the bay of Ooiak, the deepest fiord on the island, divided from the bay of Killnida on the eastern side by only a narrow range of hills. To the northward of this bay there is one other indentation on Kadiak island, the bay of Ounganik, divided into two arms by the island of the same name,

and one large bay on the west side of Afognak island, named Paramonof bay. With the exception of Spruce and Wood islands the smaller islands of this group are uninhabited, and serve only as hunting-ground for the inhabitants of Kadiak and Afognak.

Southward from the Kadiak archipelago are the Semidi group and the island of Oukanok (also called Chirikof island). They are hilly and evidently of volcanic origin, earthquake shocks being still of frequent occurrence. In the autumn of the year 1880, when the inhabitants of Sitka, 600 miles to the eastward, were startled by a violent earthquake, similar phenomena were observed on these islands, while no subterranean movement was felt at Kadiak and the adjoining islands.

The next large group of islands is the Shumagin, consisting of the islands of Ounga (the most important of the group), Popof, Koroviu, Andromika, Nagai, Great Koniusha, Little Koniusha, Simeonof, Nuniak, and a number of small rocky islets. This group, which received its name from Bering during his second voyage, bears indications of volcanic origin, great changes in the elevation of points and headlands having taken place within historic times. In geological formation they are nearly all alike, consisting of slate and porphyry, but on Ounga island are extensive veins of bituminous coal. The product of these veins has, however, been declared unfit for steaming or manufacturing purposes, and, after expensive experiments continued through a long series of years, the mines have been finally abandoned. The most important cod-fish banks now utilized by San Francisco fishermen in Alaska are located in the immediate vicinity of the Shumagin group. Between the Shumagin islands and Unimak, the first of the Aleutian group, the sea is dotted with a multitude of islands, reefs, and rocks of volcanic origin too numerous to describe in detail; they form the most important sea-otter hunting-ground of all Alaska, extending from Peregrebnoi island in the north to Sannakh in the south.

The island of Unimak is about 60 miles in length, extending from northeast to southwest, closely resembling in its general formation the Alaska peninsula, from which it is separated only by a shallow strait. The most prominent features of this island are its two volcanic peaks, the Shishaldin, rising in one elegant pyramid to a height of between 8,000 and 9,000 feet, and the Pogromny, between 5,000 and 6,000 feet in height. The whole island has been described as the vault of a subterranean smelting-furnace with many chimneys, through which flames, sparks, and ashes ascend from the molten masses beneath. It has been and is still the theater of the most constant volcanic action in all Alaska. In the earliest times since the discovery of the island by the Russians whole ridges of mountain peaks have been observed to split open and emit huge flames, torrents of lava, and clouds of ashes. These manifestations were always accompanied by the most violent earthquakes, tidal waves, and floods, the latter caused by the sudden melting of masses of ice and snow on the mountain tops. The greatest activity on record occurred in 1796, 1824, and 1825, and as late as 1827 burning lava was observed descending from the craters. Unimak has also from time immemorial been the Aleutians' great storehouse, from which they obtain sulphur and obsidian, the latter being employed in the manufacture of knives, spears, and arrow-heads. The Russian missionary Veniaminof, who witnessed one of these eruptions in the year 1825, describes the event as follows:

On the 10th of March, 1825, after a prolonged subterranean noise, resembling a heavy cannonade which was plainly heard on the islands of Oonalashka, Akoon, and the southern end of the Alaska peninsula, a low ridge on the northeast end of Unimak opened in five places with violent emissions of flames and great masses of black ashes, covering the country for miles around. The ice and snow on the mountain tops melted and descended in a terrific torrent 5 to 10 miles in width on the eastern side of the island. Until late in the afternoon the sea on that coast was turbid after this eruption. The Shishaldin crater, which up to that time had also emitted flames, continued to smoke only, while about midway between summit and base a new crater was formed, which was still smoking in the year 1831. On the 11th of October, 1826, a small peak in the interior of the island opened under violent explosion of fire and a rain of ashes, which covered not only the southern end of Alaska peninsula, but Sannakh and Ounga and other adjoining islands. Since that time smoke comes out of many places among the loose masses of rocks on the mountain side, and all the streams and ponds in the vicinity are hot enough to emit steam in midsummer.

Between Unimak and Oonalashka there is a group of islands which was formerly named the Kreuzitzin group. The most important of this group are Avatanok, Tigalda, Ougamak, Akoon, Akutan, and Ounalga. The latter island has no high mountains, but is very rocky, and its coast consists of steep, almost inaccessible cliffs. The island of Akutan is nearly circular in form, and has a group of mountains culminating in a volcanic peak 3,300 feet in height. Smoke still issues occasionally from the crater, the inner side of which is lined with deposits of sulphur of great purity, and many hot springs emerge from the fissures and crevices, in one of which the temperature is sufficiently high to boil meat and fish. The island of Akoon is comparatively low, but smoke can be seen to ascend from one of its peaks. The natives report deposits of coal in the southeast side of the island, and Tigalda, high and rocky at its south end and level in the north, also exhibits a carboniferous formation.

The great island of Oonalashka, the most important of the Aleutian chain, is about 120 miles long and 40 miles wide. Three separate groups of mountains occupy the coast and interior: The Makushin group, consisting of two parallel chains running northwest and southeast, between the bay of Makushin and Captain's harbor, with the volcanic peak Makushin 4,000 or 5,000 feet in height; the Bobrovoi or Otter mountain, extending from northeast to southwest, between Captain's harbor and Beaver bay; and the Koshigin mountains, extending through the southern portion of the island from northeast to southwest. The snow never leaves the summits of these mountains.

The volcano of Makushin lies about 20 miles north of the anchorage in Captain's harbor, and is an almost perfect cone in shape, blunted a little at its apex, where the crater is located. No flames or lava have been emitted

by this volcano in the memory of several generations; but smoke still issues at brief intervals, and earthquakes and subterranean noises are of frequent occurrence. Russian naval officers who visited the island at long intervals in the early part of this century assert most positively that many of the points and ridges changed entirely in outline owing to this volcanic action. A lake near Vessleovsky cape, at the west entrance to Captain's harbor, was by Veniaminof described as a lagoon connected with the sea, but at the present day it is separated from the latter by quite a wide strip of rocky land.

The geological formation of Oonalashka consists chiefly of granite, basalt, porphyry, and slate in alternate layers, and a few hot springs are found at various points on the island.

Three vast bays indent the shores of Oonalashka island. One opening to the northward—Captain's harbor—is divided into two branches by the island of Amaknak, and is the site of the principal settlement of Ilivliuk. Another bay, the largest in size on the island, opens into the Pacific in a northeastern direction; this is Bobrovoy or Sea-otter bay, nearly 30 miles in length. A narrow isthmus separates this gulf from the bay of Maknshin, opening westward into Bering sea. The whole south coast of the island is cut up into deep fjords, but as they are open to all southerly and easterly winds they afford no anchorage for shipping, with the exception perhaps of the small bay of Kiliuliuk, whence a portage route leads across to the bay of Kashiga, debouching into Ounnak strait. An excellent harbor opening into the same passage is the bay of Chernovsky, near the southwestern extremity of the island.

Separated from Oonalashka by a pass only 5 miles in width is the island of Ounnak, nearly 60 miles in length but not over 10 miles wide at any point. The southern extremity of this island is low, rolling prairie-land, rising gradually into a chain of mountains crowned with snow-covered summits, two of which are active volcanoes. The southernmost of these is situated a short distance northward of the present settlement. The larger and more important is the Vsevidof, which bears its head nearly in the middle of the island, just south of Inauudakh bay. Another extinct crater is located near the north end of Ounnak island, and bears the name of Tulik. Earthquakes and rumbling noises are of frequent occurrence here, and as late as the year 1878 a new crater, emitting steam and boiling mud, after a brief eruption of flames and ashes, appeared in the sloping plain between the southern volcano and the settlement. The whole coast of the island is beset with rocks to such an extent that it is shunned by the navigators. The eruptions of ashes and rocks from the active craters frequently fill up the creeks and mountain streams and seriously interfere with the periodical runs of salmon and other fish. These disturbances also affect the neighboring coast of Oonalashka; and at the present day only one out of eleven populous villages noted by the earlier visitors is in existence. On the northeastern side of the Vsevidof crater a geyser has been observed, in which the water rises every fifteen minutes to a height of about two feet, the temperature being sufficient to boil meat or fish; but the stream rises out of a gravel deposit and disappears without leaving any trace of opening or funnel behind. The natives report a large number of hot springs in various portions of the island. The general formation of the mountain seems to be porphyry and granite, intersected with large masses of obsidian.

To the northward of Ounnak, at a distance of between 10 and 12 miles, lies the small rocky island of Bogoslov (Saint John the Theologian). This island or crater appeared above the waters of Bering sea within historic times. On the 18th of May, 1796, a Russian trader named Krukof found himself on the north end of Ounnak island; the weather was thick and stormy, and there were many indications of volcanic disturbance, but on the following morning the atmosphere cleared and a column of smoke became visible some distance at sea. Toward evening a black object appeared under the smoke, and during the night large flames of such brilliancy rose up from the same point that on the island night was converted into day, and at the same time an earthquake with thundering noises shook the whole island, while rocks were occasionally thrown across the sea from the new crater. With sunrise of the third day the earthquake ceased, the flames went down, and the newly-created island loomed up in the shape of a cone. A month later Krukof found the peak considerably higher, still emitting fire and ashes; later, however, the flames ceased altogether, and volcanic action was confined to the emission of steam and smoke. Four years later, in 1800, the smoke had ceased, and when eight years had elapsed since the first appearance of the island some hunters visited its shore, and at that time the sea immediately surrounding it was still warm, and the rock too hot to permit of landing, but a few years later the cliffs of Bogoslov had cooled sufficiently to attract a large number of sea-lions. From the time of its first appearance until 1823 successive visitors reported an increase of both height and circumference, but from that date no further elevation seems to have taken place.

The next group of islands to the westward bears the common name of Four Peaks islands, and consists of Uliaga, Kigalgin, Kagamil, Chuginadak, and Unaska, and a few smaller rocky islets. On nearly all these islets we find craters which are or have been active within historic times, and smoke still issues from those on Unaska, Kagamil, and Amukhta. Earthquakes are frequent, and deposits of lava, ashes, obsidian, and other volcanic products abound everywhere. But one of the islands, Chuginadak, affords an anchorage for shipping, and consequently the group is rarely visited except by sea-otter hunters. In former years many villages existed here, and in cavities of the island of Kagamil a large collection of mummies in a very good state of preservation has been discovered.

The Andreianovsky group of islands, named after its discoverer, the Russian trader Andreian Tolstykh, consists of 14 or 15 large islands and a number of small ones. The easternmost of these is Signam, nearly circular in shape,

monntainous throughout, with several smoking craters, without harbors, and uninhabited. Southwest of Signam lies the island of Amlia, extending from east to west about 30 miles but only 2 or 3 miles in width. A long chain of conical peaks traverses the whole length of the island, bnt no active craters are known to exist. A few streams empty into the Pacific in the south and into Bering sea in the north, bnt only one small anchorage exists on the south coast. At the time of its first discovery Amlia contained several villages, but they have long since been abandoned.

The largest of this group is the island of Atkha. It resembles Oonalashka in shape, but its indentations are less deep and not so easily accessible. Near the north point of the island there is a volcano called the Korovinsky, nearly 5,000 feet in height, and a few miles to the south another rises to almost the same elevation. The Kliutcheva (or Springs volcano), and the third, somewhat less in height, though also covered with eternal snow, is situated near the northeastern extremity of the island, and was named Sarychef. A few smaller volcanoes are scattered along the gradually-descending mountain range forming the backbone of the island. The northernmost only of these craters is active at the present day, emitting smoke and ashes, bnt earthquakes and subterranean noises are felt and heard all over the island. The largest indentation of Atkha is on the west side, in the bay of Korovinsky, on the shores of which the principal settlement was formerly located. The old establishment was removed, however, to Nazan bay, nearly opposite, on the east coast of the island. In neither of these bays was the anchorage very desirable, one being exposed to westerly, the other to easterly winds. About midway on the west coast is a sheltered harbor, Banner bay, extending some 5 or 6 miles inland, and separated from a corresponding opening on the eastern coast by a low, narrow isthmus. The monntains in the northern part of Atkha exhibit the only glacial formation known to exist on these islands west of Oonimak. Hot springs are plentiful throughout the interior, and at two or three points the natives report mud craters throwing up liquid masses varying in color from red to green, blue, and a brilliant yellow.

Of the small islands adjoining Atkha in the west but little is known beyond the fact that they are monntainous, uninhabited, and evidently of volcanic origin. The nearest large island is that of Sitkhin, which is round in shape and mountainous, culminating in a snow-covered peak 5,000 feet in height, which was reported by Sarychef as emitting flames in the year 1792, but at present no volcanic action is observed beyond hot springs emerging from the rocks in many places.

To the westward of Sitkhin rises the large island of Adakh, covered with mountains and indented with several bays, of which, however, only two, Kiliuliuk bay on the west and Shagakh on the east, afford anchorage to vessels. One grand peak rising up nearly in the center of the island was called the "white crater" by the Russians, but at present it seems to be extinct; hot springs abound, however, throughout the mountains and valleys of the island.

The islands of Kanaga and Tanaga, in the vicinity of Adakh in the west, also exhibit a succession of volcanic peaks rising abruptly from the sea, a few of them still smoking and grumbling. Only on Tanaga island is there an anchorage on its western shore, in the bay of Slava Rossia.

The small island of Anangussikh, or Goreloj, is situated due west of Tanaga, and consists of one immense peak rising abruptly from the sea, with a circumference of about 18 miles. Several of the Russian explorers estimated the height of this peak greater than that of Shishaldin, or more than 9,000 feet, bnt no recent measurements to confirm this statement have been made.

Throughout the whole group of the Andreianovsky islands Atkha contains the only settlement; all the other islands, though once populous, now serving only as temporary hunting-grounds.

The next group of islands to the westward, named by the Russians the Rat islands, consist of a mass of small volcanic peaks, with the exception of two of somewhat larger dimensions—the islands of Amchitka and Kyshka. Hot springs are found on nearly every island of the group, but smoking craters exist only on Semiseisopochnoi, of Seven Peak islands, and on Sitkhin; the latter being probably the westernmost active volcano of the Aleutian chain. The only anchorages to be found in this whole group are on the west coasts of Kyshka and Amchitka-respectively.

The last subdivision of the Aleutian chain was classed by the Russians as a separate group (the Near islands), and consists of the islands of Attoo and Agatoo, the latter situated a short distance southeast of the former. The formation of these two islands seems to be very similar to those to the eastward, but no volcanic phenomena have been observed here within historic times. On the northeastern coast of Attoo the only settlement is situated on the small sheltered bay of Chichagof, but another anchorage, called Massacre bay, exists on the south coast. The island of Agatoo has long since been abandoned by its inhabitants, and affords no shelter to sailing-craft.

THE VOLCANIC REGION OF ALASKA.

As the best authority extant on the volcanic manifestations in Alaska I use a translation of Dr. C. Grewingk's *Treatise on the volcanic character of certain regions of the Russian possessions*, published in the year 1850, in the Proceedings of the Mineralogical Society in St. Petersburg. Grewingk writes as follows:

We know of no more extensive theater of volcanic activity than the Aleutian islands, the Aliaska peninsula, and the west coast of Cook's inlet. Here we have confined within the limits of a single century all the known phenomena of this kind: the elevation of mountain chains and islands, the sinking of extensive tracts of the earth's surface, earthquakes, eruptions of lava, ashes, and mud, the

hot springs, and exhalations of steam and sulphuric gases. Not only does the geological formation of most of the islands and a portion of the continent point to volcanic origin or elevation, but we have definite information of volcanic activity on twenty-five of the Aleutian islands. On these islands forty-eight craters have been enumerated by Veniaminof and other conscientious observers, and in addition to these we have on the Alaska peninsula four volcanoes, two on Cook's inlet, one on Prince William sound, one on Copper river, and one in the vicinity of Sitka (Mount Edgecombe); three other peaks situated between Edgecombe and the Copper river have not been definitely ascertained to be volcanic. The distance from the Wrangell volcano, in the vicinity of Copper river, to the Sitkhan island is 1,505 nautical miles. We have every reason to believe that the Near islands (the westernmost of the Alutian group) are also extinct craters; and thus we find one continuous chain of volcanoes from Wrangell to the near Commander islands (Bering and Copper), pointing to the existence of a subterranean channel of lava finding its outlet or breathing-hole through the craters of this region. The nearest volcanoes to the south of this line are Mount Baker on the American continent, in latitude $43^{\circ} 48'$, and the craters of the Kurile chain of islands on the coast of Asia. That a subterranean connection exists between this long line of craters is indicated by the fact that whenever volcanic activity grows slack in one section of the chain it increases in violence at some other point, an observation which has been confirmed by all observers. From all information on the subject at our disposal it appears that the craters of Mounts Fairweather, Crysmon, and Edgecombe, and Mount Calder (Prince of Wales island), have not been active since the middle of the last century, and as the universal law of volcanic activity seems to place the frequency of eruptions in an inverse ratio to the height of the volcanoes, we might reasonably expect that the season of rest for these craters will be a prolonged one; but how terrible and devastating must be the awakening of the sleeping furnaces when it occurs! With regard to Mount Saint Elias, we have many authentic data as to its volcanic nature. Belcher and Wraugeil consider that the black ridges descending from the summits of the mountains, and the fact that the glaciers on Copper river exhibit a covering of vegetation, as proof of the volcanic character of the mountain. The first phenomena may rest entirely upon an optical delusion, as it is not at all certain that the black streaks consist of lava or ashes, while the appearance of vegetation on the surface of glaciers on Copper river is very probably due to the fall of volcano ashes; the latter phenomenon may be traced as easily and with far more probability to the Wrangell volcano.

With a feeling of relief we abandon this field of speculation and enter upon a review of the volcanic phenomena of these regions in geographical as well as chronological order. All the editions upon which our list is founded came from the reports of the accidental visits of European travelers and explorers. Owing to the low grade of civilization of the natives and even of the colonists it has been exceedingly difficult to collect the necessary information from inhabitants of the country, but such as it is I have made use of all material accessible to me. We first review the volcanic manifestations as far as known in geographical order.

On Prince of Wales island, Mount Calder, located in latitude $56^{\circ} 15'$ and longitude $133^{\circ} 30'$, was active (?) in the year 1775, according to Don Antonio Manrello; not active in 1793, according to Vancouver, and reported in the same condition by all later observers. On Baranof island we have hot springs, situated in latitude $56^{\circ} 51'$ and longitude $135^{\circ} 19'$, which were reported flowing by Baranof in 1779, and have remained in the same condition. On the mainland we have Mount Crysmon, in latitude $58^{\circ} 45'$ and longitude 137° , reported not active by Cook in 1778. Mount Fairweather, in latitude 59° , longitude $137^{\circ} 30'$, reported not active by La Pérouse in the years 1786 to 1788; Mount Saint Elias, in latitude $60^{\circ} 17'$, longitude $140^{\circ} 51'$, reported not active by Vancouver in 1794, and continued in the same condition. The east crater on Prince William sound (?), in latitude $60^{\circ} 54'$, reported in eruption by Don Fidalgo; Mount Wrangell, in latitude 62° and longitude 142° , discovered in 1819, and reported active by Kliwosky and Wrangell. The high peak or Rédonto mountain, latitude $60^{\circ} 30'$, longitude $152^{\circ} 143'$ (west coast of Cook's inlet), reported smoking since 1819 by Wrangell and others. Mount Ilyamna, latitude 60° , longitude $153^{\circ} 15'$, reported not active by Bering in 1741 (?) and active by Cook in 1778; also by Don Artsaga in 1779; also in 1763 by Portlock and Dixon; and in 1793 by Vancouver, and also by all later observers, and still continues the same. On the Alaska peninsula the Veniaminof crater, latitude 56° , longitude 158° , reported smoking by Veniaminof from 1830 to 1840; hot springs, in the same vicinity, reported flowing by Veniaminof at the same time, and continue in the same condition; Pavlovsky crater, in latitude $55^{\circ} 24'$ and longitude $161^{\circ} 48'$, reported active from 1762 to 1768 by the promyshleniks; according to Chamisso one of its craters became extinct in 1786, reported active by Sarychef in 1790, also by all later observers, and is still smoking. The craters of Medvednikof and Morshova, in latitude 55° and longitude $162^{\circ} 37'$, reported not active in 1768 and 1769 by Krenitzin, but active in 1790 by Sarychef, now smoking occasionally; hot springs at the entrance of Morshova bay, in latitude $54^{\circ} 34'$ and longitude $152^{\circ} 25'$, were reported flowing in 1832 by Lütke. Hot springs, on the peninsula, in latitude 55° , longitude $163^{\circ} 10'$, were reported by Veniaminof as flowing in 1838; hot springs, on Moller bay, latitude $55^{\circ} 45'$, longitude $160^{\circ} 30'$, were reported flowing in 1828 by Lütke and in 1840 by Veniaminof, and still continue in the same condition. The volcanic island of Amnak, latitude $55^{\circ} 26'$, longitude $163^{\circ} 15'$, was active during the last century, but not active since 1804, according to Krusenstern. On Oonimak island the volcano Khaginak, in latitude (?), has not been active within historic times, though Veniaminof, from native accounts, conjectured that its crater was formed in the year 1690.

Of the two other volcanoes on this island, Shishaldin, in latitude $54^{\circ} 45'$, longitude 164° , and Pogromny, latitude $54^{\circ} 30'$ and longitude $164^{\circ} 45'$, we have the following data:

In the years 1775 to 1778 the Shishaldin was reported as occasionally active by Zalikof; in 1778 Shishaldin was reported smoking by Cook, and in 1790 by Sauer; it was also reported smoking in 1824 by Veniaminof, and as in full eruption in 1825; in 1826 a new eruption was reported by Veniaminof and also increased activity from 1827 to 1829, and from 1830 to 1831. Pogromny had its greatest activity in the year 1795, and another violent eruption in 1827, and in the autumn of 1830; both are still smoking.

In the island of Akoon a crater, situated in latitude $54^{\circ} 17'$, longitude $165^{\circ} 33'$, was reported by the promyshleniks as not active between 1765 and 1770; in the year 1828 Veniaminof reported it smoking. Hot springs were reported flowing in 1828, and still continue in the same condition. The crater on Akutan island, latitude 50° , longitude $165^{\circ} 54'$, was reported not active in 1778 by Cook, and also by Shelikhov in 1785; it was reported smoking by Sauer and Sarychef in 1790; also by Veniaminof and later observers. On Oonalashka island the Makashin crater, in latitude $53^{\circ} 52'$, longitude $166^{\circ} 48'$, was reported active by Krenitzin in 1768, not active by Cook in 1778, extinct by Sauer in 1790 and 1792, smoking by Sarychef in the same year. In 1802 an eruption, accompanied with earthquake, was reported by Langsdorff; in 1816 and 1817 Eschholz reported it as not active; in 1880 Veniaminof reports earthquakes, and in 1826 an eruption; later observers reported it still smoking. On Umnak island the promyshleniks reported no volcanic phenomena between 1765 and 1770; in 1784 the Vsevidof crater was still smoking; in 1790 it was reported smoking by Sarychef. From 1817 to 1820 violent eruptions and earthquakes took place throughout the whole Umnak range. In 1824 and in 1830 other eruptions were reported by Lütke and Postels. The volcanic island of Bogoslov rose from the sea in 1796 with earthquake and eruptions; reported as not smoking in 1800 by Kotzebue; also in 1802 by Langsdorff; reported smoking in 1804 by Kotzebue; in eruption in 1806 by Langsdorff; throwing up stones in 1814 by Baranof; decreasing in height in 1815, also by Baranof; not active in 1816 and 1817, according to Eschholz, and smoking again in 1820, according to Dr. Stein; reported by Veniaminof as no longer smoking since 1823. The volcano on Kagamil island, in latitude $52^{\circ} 53'$, longitude $169^{\circ} 30'$, was reported to have been active by Lütke and Postels. In 1828 Veniaminof reported only hot springs, no exhalation of gases, and subterranean noises. On the island of Tnaga, in latitude 53° , longitude $169^{\circ} 45'$, the volcano is reported not active by Bragin in 1774; in 1828 Lütke reported it active, with many hot springs at its base. The volcanoes of Oniagan and Chegulakh, in latitude $52^{\circ} 53'$ and longitude $169^{\circ} 40'$,

and latitude $53^{\circ} 08'$, longitude $169^{\circ} 24'$, respectively, have not been active since the end of the eighteenth century. The volcano of Unaska, latitude $52^{\circ} 40'$, longitude $170^{\circ} 28'$, was reported smoking in April, 1817, by Choris; in eruption in 1824 by Lütke, and in 1830 by Veniaminof. The volcano of Amnkhata, in latitude $52^{\circ} 30'$, longitude $171^{\circ} 04'$, reported in full eruption in June, 1786, by Shelikhof and in 1790 by Sarychef; in 1830 it was reported not active by Lütke, but smoking by later observers. The volcano of Signam, in latitude $52^{\circ} 20'$, longitude $172^{\circ} 12'$, with mud craters and hot springs, was reported active by Sarychef in 1790, and smoking by Lütke in 1827; also by later observers. The five craters on the island of Atkha were reported active from time to time since 1760 by Zaikof, Tolstykh, Lütke, and others. The Sarychef crater was considered extinct since 1792, but broke out again in 1812, according to Vassiler. The Korovinsky crater was in eruption and smoking in 1829 and 1830. The Konik peak was reported smoking in 1827 by Lütke; in 1829 by Ingenström; also by later observers.

The volcano on Sitkhan island, latitude $52^{\circ} 04'$, longitude $167^{\circ} 02'$, was reported not active by Tolstykh in 1760, in eruption by Sarychef in 1792, covered with snow and smoking by Ingenström in 1829, also by later observers. The White volcano, on Adakh, in latitude $52^{\circ} 45'$, longitude $176^{\circ} 30'$, was reported active in 1760 by Tolstykh; also in 1784 by Shelikhof; and in 1790 and 1791 by Sauer and Sarychef. The volcano of Kanaga, latitude 52° , longitude $176^{\circ} 50'$, was reported active, with many hot springs at its base, by Tolstykh in 1763, also by Shelikhof in 1768; smoking in 1790 and 1791 by Sarychef, and in 1827 by Lütke, and by later observers. The crater on Tanaga, in latitude 52° , longitude 178° , was reported active from 1763 to 1770 by promyshleniks, and smoking by Sauer in 1791, and by later observers. The volcano on Gorelof, latitude $51^{\circ} 43'$, longitude $178^{\circ} 43'$, was reported active in 1760 by Zaikof, in eruption by Sarychef in 1792, smoking by Ingenström in 1829. The volcano of Semiseisopochnoi, latitude 52° , longitude $180^{\circ} 15'$, reported smoking in 1772 by Bragin; also by Sarychef in 1790 and 1792; by Lütke in 1830, and by later observers. The volcano of Sitignak, latitude $51^{\circ} 39'$, longitude $181^{\circ} 33'$, was reported active by Bragin in 1776; and finally the crater of Sitkhan, in latitude 52° and longitude $181^{\circ} 30'$, reported smoking by Lütke in 1828.

CHRONOLOGICAL REVIEW OF VOLCANIC PHENOMENA ON THE ALEUTIAN ISLANDS AND THE NORTHWEST COAST OF AMERICA FROM THE YEAR 1690.

- Formation of the crater on the highest peak of Oonimak island east of the Shishaldin, probably the Khaginak.
 1700 to 1710.—Volcanic activity on the Ouliagan, Chegnlakh, and Amnak.
 1741.—Iyamna mountain not active. (?)
 1760.—Adakh, Gorelof, Chechna, and Atkha smoking; Koniushy island rising.
 1762.—Pavlovsky volcano, on Aliaska peninsula active.
 1763.—Volcano on Tanaga active (until 1770).
 1768.—The Makushin and another volcano on Oonalashka active; also the Modvednikof and Morshova on the peninsula.
 1770.—Amukhton, active.
 1772.—Seinisaisopochnoi smoking.
 1774.—The volcano on Taunakh-Angunakh active.
 1775.—Mount Calder and other peaks on Prince of Wales island active; also one crater on Oouimak island intermittent.
 1776.—The volcano on Sitignal in eruption.
 1778.—Ilyamna volcano active, and Shishaldin smoking.
 1784.—Vsevidof, on Oumnak island, smoking; also the Chechna.
 1786.—The volcano on Kanaga in eruption; Pavlovsky crater active; Siguam and Amukhta active, the former until 1790, the latter until 1791.
 1788.—No volcanic phenomena reported, but on the 27th of July a flood submerged the islands of Sannakh and Ounga and a portion of the peninsula (evidently a tidal wave owing to earthquake).
 1790.—Akutan peak smoking; also Vsevidof, on Oonimak, the Kanaga, and Semiseisopochnoi. The Makushin, on Oonalashka, active from 1790 to 1792; and the Shishaldin from 1790 to 1825 (intermittent). Eruption reported on Prince William sound in latitude $60^{\circ} 54'$. (?)
 1791.—The peaks of Tanaga and Kanaga, smoking.
 1792.—The peaks of Sitkin and Gorlof in eruption in May; Semiseisopochnoi smoking in June.
 1793.—Eruptions in southwest end of Oonimak, while a crater on the north side becomes extinct.
 1796.—Appearance of Bogoslov island; Edgecombe active. (?)
 1796 to 1800.—Craters on the Four Peak islands active; also Amnak island.
 1800 to 1815.—Bogoslov rising, but not smoking.
 1802.—Makushin in violent eruption—earthquakes. Bogoslov not active.
 1812.—Sarychef peak, on Atkha, very active after a long repose.
 1817.—An eruption on the north end of Oumnak with a flow of ashes and earthquake; Unaska smoking.
 1818.—Makushin, on Oonalashka, shaking; subterranean disturbances on Amnak.
 1819.—Mount Wrangell in eruption; the Rédouto volcano smoking.
 1820.—Bogoslov smoking.
 1824.—Shishaldin in violent eruption from 1824 to 1825; Unaska in violent eruption after a long repose.
 1825.—Eruptions on the northeast side of Oonimak.
 1826.—Eruptions and fall of ashes on the south end of Oonimak; the Makushin, on Oonalashka, smoking and shaking.
 1827.—The Shishaldin and the Pogromny, on Oonimak, in eruption from 1827 to 1829. The peaks on Koniushy and Kanaga smoking. In June, earthquake on Copper island.
 1828.—The peaks of Sitkin, Akton, Akutan, Tannakh-Angunakh, Atkha, Koninshy, Gorelof, on Oonimak, smoking.
 1829.—Shishaldin smoking; also Sitkin, Gorelof, Tanaga, Kanaga, and Atkha smoking.
 1830 to 1831.—Shishaldin in violent eruption; also an eruption on southwest end of Oumnak and on Unaska; the Korovinsky, on Atkha island, smoking.
 1836.—Earthquake on islands of Saint Paul and Saint George.
 1838.—Shishaldin in eruption, and three other peaks on Oonimak island smoking; the Tannakh-Augnnakh, the Makushin, on Oonalashka, the Akutan, the Pavlovsky crater, and another peak on Aliaska peninsula, smoking.
 1844.—The Korovinsky crater, on Atkha, and the Makushin smoking.

From this review, however incomplete, it would appear that the volcanic activity of the Aleutian islands and the Aliaska peninsula has been decreasing since the discovery of those regions by the Russians. When we consider the three classes of manifestations of volcanic activity, that is, eruption, the reduction of sulphuric deposits, and total inactivity, and apply them to the islands mentioned, we find

that in the year 1830 twelve of the islands produced sulphuric deposits, eight islands were in a state of total inactivity, and five (Unaska, Taunakh-Angunakh, Ounnak, Oonalashka, and Ooulmak) were in a state of perceptible, though not always violent, uninterrupted activity.

It is also clear to the observer that certain relations exist between the alternate repose and activity at various points along the northern volcanic belt now under consideration. According to the earliest accounts of Tolstykh, Bragin, Zaikhof, Shelikhof, Cook, Sauer, Vancouver, and others, the islands of Sitignak, Kanaga, Amnkhita, Kigamil, Bogoslov, Oonalashka, Ooulmak, and the volcanoes of the peninsula and the Ilyamna were from the middle to the end of the last century in a state of alternate but generally decreasing activity, while the center of volcanic action apparently advanced from west to east. On Kamchatka, where from 1727 to 1731 the Kluchev was in constant eruption, and in 1737 and 1739 violent eruptions took place from the Avatcha and another volcanic peak, we find only two violent eruptions during the second half of the eighteenth century (of the Kluchev in 1762 and 1767, and of the Avatcha in 1773 and 1796). In 1820 the furnaces of Unaska, Ounnak, and Ooulmak evinced renewed activity, while at the same time Mount Wrangell was in eruption. When, however, after this period, the volcanic manifestations on these islands began to decrease, the Kamchatka peaks once more opened their craters with increased violence in the years 1827 and 1829. Of late (1849) we have received no reports of volcanic phenomena on the Aleutian Islands, but the Kamchatka craters are once more in eruption since 1848.

These data, vague as they are, do not furnish proof positive of a connection between these subterranean channels, but the fact that within a more limited area, as on the islands of Ounnak, Oonalashka, and Oonimak, the activity of one crater ceased when another was in eruption, points in the same direction.

The Aleutian chain of islands connects the American continent and the Alaska peninsula in the east and the Commander islands in the west as with a knotted cable that has sunk under its own weight and caused its supports or end-posts to converge on both the Kamchatkan and American coasts. Several ranges of mountains run at right angles with this chain or dam. When we look at the outward shape of the islands we find those in the west spreading and flattening toward the north and northwest, and those in the east spreading to the west and south; consequently the lifting force must have been strongest in the direction from southwest to northeast, and this has been the direction of nearly all the earthquakes within historic times.

It seems that three kinds of volcanoes are represented in the Aleutian chain: eruptive, or true volcanoes; intermittent, or partially eruptive volcanoes; and volcanoes that have risen and acquired elevation without an outbreak through the surface. All the volcanoes, with the exception of Shishaldin, have their summits covered with eternal snow. The location of craters on these peaks is as follows: On Shishaldin the crater is located on the summit of the cone; that of Khaginak is on the summit; that of Akoon is also on the summit; on Akutan volcano the old crater was at the summit, and another of later date is situated on the north slope of the peak; the crater of Makushin is located at the summit of the blunted cone; the crater of Vsevidof, on Ooulmak island, is on its comb-like summit; the crater of Cheglnakh is at the summit of the cone; and that of Unaska is also on the summit of the blunted cone; the Korovinsky volcano has its crater in a depression between two peaks; the volcanoes of Kanaga and Tanaga have their craters at the summit, while that of Sitkin is located on one side of the conical peak.

A majority of the volcanoes mentioned have their craters at the summit, and should consequently be true volcanoes, but we are by no means sure that all the apertures from which smoke issues are actual craters affording constant communication between the entrails of the earth and the external atmosphere. On many of the island volcanoes the appearance of smoke is due to hot springs or steam arising from cracks or clefts differing very essentially from actual volcanic craters. Where the smoking or steaming is periodical, and increasing in volume during the autumn of the year, we may presume that the constant communication with the volcanic earth beneath exists, since the voluminous atmospheric precipitation at that season of the year would penetrate to the heated strata of the earth and rise as steam from the furnace or crater.

The eruptions reported by the various observers must also be accepted with due caution; in many instances they consisted probably of ignited gases only, as several such eruptions have been described as taking place for prolonged periods on the summits covered with eternal snow. Occasionally the appearance of fire may be traced to the mere reflection of the glow of molten lava in the interior of the crater on the clouds and vaporous atmosphere above. It is true that lava, obsidian, and pumice-stone are found at various points of the Aleutian islands, but we have no description of streams of burning lava, a phenomenon which could not have failed to impress itself upon the mind of even the most careless observer. A few eruptions that have occurred within historic times consisted of ashes, stones, and liquid mud, and they seldom took place in the main craters, being apparently of a subordinate and spasmodic character. We know that sulphur is gathered from many of the craters, but the crystallization of sulphuric gas is among the weakest manifestations of volcanic activity. A majority of the Aleutian volcanoes belong to this class of sulphur-producing clefts and craters.

The falling in of mountains rising on the east coast of Bering sea, the apparent swelling and bursting of whole sections of islands—all these are indications pointing to a constant process of formation of peaks, craters, and crevices by elevation. A gradual rising is still observable on Oonimak island and the north coast of Alaska peninsula. Bering sea at its western end has a uniform depth of a hundred fathoms or more, while the eastern half is very shallow. Another point in favor of the theory that this region owes its origin more to gradual elevation than to violent eruption lies in the fact that the island of Bogoslov was not the result of eruption and piling up of débris or lava, as the island rose very slowly, and its crater was active but a very brief period of time; the elevation continued long years after all other volcanic manifestations had ceased. The only islands actually formed by accumulations of lava during eruptions in Bering sea are Saint Matthew, Saint Michael, and Sturt islands, the Priylof group, and perhaps Amnakh island.

CHAPTER IV.—HISTORICAL SKETCH OF ALASKA.

A report upon a country so little known to us as Alaska is at the present day would scarcely be considered complete without a brief historical sketch of its first discovery and subsequent development until its final fusion into the union of states and territories. For this purpose it is unnecessary to go back beyond the second voyage of discovery undertaken by Vitus Bering, who in the course of his first explorations, some years previously, had discovered the strait named after him, and proved to the world the separation of the continents of Asia and America. The so-called second northern naval expedition, fitted out in the year 1733 by order of the empress Anna, though unfortunate in nearly all its details and fatal to its commander, served to show the Russian navigators the way to unknown regions of North America and adjoining islands. The information brought back by members of the expedition, however vague and unsatisfactory, acquainted the Russians with some islands the existence of which had been exceedingly doubtful. The labors of this expedition resulted in the discovery of the North American coast in the vicinity of latitude 58°, and of the several islands of the Aleutian chain, as well as of the greater

portion of the Kurile islands. A few of the latter had been reported as early as the end of the sixteenth century, but for more definite information as to these localities the world was indebted to the Russian traders and hunters or other adventurers, who, upon a mere rumor of the existence of valuable furs, set out in such craft as they could lay their hands upon and made their way from island to island until the whole region was discovered.

Up to the year 1743 we have no account of any expedition in search of furs in this direction, but from that time for a period of nearly sixty years merchants and other individuals fitted out vessels and even squadrons of small craft, either individually or in company with others, for hunting and trading on the Aleutian and Kurile islands. Much of the information and reports brought back by these adventurers is supported by documents still in existence. These enterprises were exceedingly numerous, but for our purpose it is necessary only to mention briefly those that accomplished any new discoveries in the direction of the American coast.

The first to engage in this traffic was a sergeant of the Cossacks of lower Kamchatka, Emelian Bassof, who sailed in a small vessel of his own construction to the islands of Bering and Copper in four consecutive voyages in the years 1743, 1745, 1747, and 1749. The next adventurer to imitate Bassof's example was a sailor named Nevodehikof, who had served under Bering, and who sailed as commander of a vessel fitted out by the merchants Chuprof & Co., in the year 1745, reaching the islands of Attoo and Agatoo. In the year 1749 a small vessel, built and fitted out by the merchant Trapeznikof, succeeded in reaching the island of Atkha and a few of the smaller surrounding islands. In the year 1759 the trader Glotoff, with a ship belonging to the merchant Nikiforof, advanced as far as the island of Oumnak, and subsequently discovered the whole group of islands, including Oonalashka, which was subsequently named the Fox islands. The discovery of this group has also been ascribed to a navigator of another expedition, Bashmakof, but as Bashmakof accomplished his voyage nearly ten years earlier, and as there is positive proof that no fox-skins were shipped to Kamchatka from the Aleutian islands previous to the year 1762, his claim to the honor of this discovery becomes very doubtful. The inhabitants of the islands also preserve a tradition that Glotoff was the first Russian who came among them, and that he baptized many of the natives. Glotoff was also the first to furnish a map of that region to his government, which map contained eight large islands situated east of Oonalashka.

In the year 1760 the merchant Andreian Tolstykh landed upon the island of Adakh, and in the course of a sojourn of three years accomplished a thorough exploration of that island and seven others surrounding it, and made a detailed report to the government, stating that he had subjected the people to the Russian crown. These islands were named, after him, the "Andreian islands". The result of his reports to the Russian government may be gleaned from the following ukase of the empress Catherine II to the governor of Siberia, Chieherin, dated March 2, 1766:

DENIS IVANOVICH:

Your information concerning the discovery and subjection of six Aleutian islands heretofore unknown, as well as the copy of the report of the Cossack Vassilutin, I have read with the greatest satisfaction. These enterprises are exceedingly pleasing to me. I am only sorry that there is no detailed description of the country and the people.

Your action in promising rewards to the merchant Tolstykh, and special privileges for any future undertakings of the same kind, under condition that a tribute of a tenth part of the result be paid to the crown, I fully approve; and you may tell him that he may proceed in accordance with this proposition. Him, as well as the Cossacks Vasseutlu and Lazarev, you will promote into the class of Siberian nobles.

God grant that the proposed voyage may be a fortunate one, and crowned with success. I should like very much to learn whether any information can be gleaned from the natives of those islands of any previous visit of Europeans to their country, and if there has been no wreck of vessels of any other nation. You must urge upon these promyshleniks to treat the natives with kindness and to avoid all oppression or ill treatment of their new brothers.

To this ukase was affixed the empress' own signature.

In the year 1761 a ship of the merchant Beehevin made the coast of the Alaska peninsula. Up to this time the relations between the natives of the islands and the Russian invaders had been altogether of a friendly character, the former submitting patiently to the demands of the new-comers, but the promyshleniks, encouraged by their easy conquests, proceeded from bad to worse, committing outrages of every kind, reducing the people to a state of servitude verging upon absolute slavery, and continued to act in this manner until the patience of even this timid race was exhausted.

The first Russians to feel the effect of a change in the attitude of the natives were the members of an expedition under command of the merchant Drushinnin, who arrived at Oonalashka in 1762. Upon a given signal the people of all the villages on the island rose and slaughtered their oppressors, until of a complement of over 150 men only four individuals, who happened to be absent from their vessels, survived; these were subsequently saved through the good offices of a charitable Aleut, who kept them in concealment in the interior of the island until it was possible to communicate with the members of another expedition.

In the meantime the governor of Siberia, in answer to his instructions to furnish more detailed information concerning the new discovery, represented to the empress that it was impossible to accomplish this as long as the new discoveries were visited only by ignorant traders, incapable of making any astronomical observations or scientific inquiries. The governor requested that some naval officers be detailed to make the desired explorations. The empress referred the matter to the admiralty college, and after some correspondence two captains of the navy,

Krenitzin and Levashev, were selected to execute the will of the empress. After many mishaps these two officers succeeded in sailing from Kamchatka in two government vessels in the year 1768. Krenitzin, who was senior in command, advanced as far as the strait between the Alaska peninsula and the island of Oonimak, and went into winter quarters, while his companion, Levashev, established himself with his crew in Captain's harbor, Oonalashka island. Krenitzin had some difficulties with the natives, resulting in several skirmishes, and both commands suffered terribly from the scurvy during the whole winter, disease and other misfortunes preventing them from doing much in the way of scientific observation, and in the following year they returned to Siberia with only one-third of the crew, the remainder having fallen victims to the scurvy or been killed by the warlike natives of the mainland.

The first visit to the island of Kadiak, made by Glotof, was also attended with disaster. He reached that island in the autumn of 1762, and went into winter quarters with his crew at the southeastern extremity of the island, in the neighborhood of the present settlement of Kagniak. After several hostile attacks, which were repulsed by the Russians, the natives kept aloof, refusing to trade; but when, in the course of the winter, scurvy appeared among the invaders, reducing their strength to less than one-third, the savages again made attempts to complete the work of the dread disease by killing the survivors, and it was only with the greatest difficulty that Glotof succeeded, late in the following spring, in launching his vessel and making his escape to Unalaska.

The history of the Russian discoveries for the next twenty years is a continuous story of outrages committed by the numerous trading expeditions and of internal quarrels between themselves. The success of the earliest adventurers had been so great that every Siberian merchant who had a few thousand rubles at his command sought to associate himself with a few others, in order to fit out a miserable craft or two and engage in the same business, and over sixty distinct enterprises of the kind can be traced. They all carried on their operations on the same basis; that is, the owner or owners of the vessel engaged a crew on shares, the cargo of furs brought back by each vessel being divided into two equal shares; one of these was claimed by the owners who had furnished the means, and the other half was divided in such a manner as to give each member of the crew one share, and to the navigator and commander two each. After the division had been made each participant was obliged to give one-tenth of his share to the government. These so-called traders had managed to do their business with an exceedingly small stock of goods. Where no opposition was offered by the natives the invaders did not even pretend to buy skins of them, but forced them to go out and hunt and turn over their booty to the promyshleniks, without payment beyond a few beads and a leaf or two of tobacco given as a gratuity in consideration of good behavior; and the unfortunate natives were given to understand that as subjects of the Russian empire it was their duty to render such services in behalf of the crown.

The beginning of the eighth decade of the eighteenth century forms an epoch in the history of the Russian fur-trade on the islands of Bering sea. For several years previous to this period the most prominent merchant in Siberia engaged in this trade was Grigor Ivaovitch Shelikhof, a citizen of the town of Rylsk, who had come to Siberia, together with Ivan Larionovich Golikof, a merchant of the city of Knrsk. For some time Shelikhof was engaged in business, in company with the latter and a few other Siberian traders, fitting out hunting expeditions to the Kurile and Aleutian islands, the results of which forced upon him the conviction that the yield of furs was growing less from year to year. The evident decrease in furs, together with the hostile attitude of the natives, provoked altogether by the inhuman treatment received at the hands of their visitors, called for some fundamental reform in the manner of doing business and the mode of treatment of the natives, in order to achieve a revival of trade. Fully aware of the necessity that the new discoveries should be connected with the mother country by closer ties, Shelikhof made up his mind to visit in person the distant regions, in order to discover the best means for the accomplishment of his ends, and for this purpose he persuaded his partner Golikof, together with another Golikof, Mikhail Sergeievich, who was called a captain, to form a new company for a period of ten years. The paid-up capital of the new firm was limited to 70,000 rubles, divided into 120 shares, and with this capital it was proposed to construct two or three ships and dispatch them on a sea voyage under the personal supervision of Shelikhof; or, according to the wording of the mutual agreement by the partners, "to sail for Alaska land, called America, and for known and unknown islands, to carry on the fur-trade and explorations, and to establish friendly intercourse with the natives."

Having fitted out at Okhotsk three galliots, named respectively the Three Saints, the Archangel Michael, and the Simeon the Friend of God and Anna the Prophetess, Shelikhof sailed with them on the 16th of August, 1783, taking passage with his wife on the first of these vessels. Bad weather and contrary winds caused the vessels of the expedition to separate, and after losing sight of the second named vessel the commander concluded to winter on Bering island. After visiting during the following year the island of Oonalashka, and repairing his vessels as far as possible, Shelikhof sailed with interpreters and ten Aleutians, who voluntarily joined his expedition, for the island of Kadiak, leaving orders for the commander of the missing vessel to follow him to the same place. On the 3d of August, 1784, the two vessels reached the island and entered a harbor, which they named after the ship Three Saints.

Several bidarkas were sent out to discover whether the island was inhabited, and in the course of the day they brought back one of the natives, whom Shelikhof treated with great kindness, making him presents, and sent him

home the next day. It was evident that the savage liked the reception given him by the Russians, as he reappeared the following day and refused to leave Shelikhof again until his final departure from the island. He not only accompanied him and served him in all his voyages about the island, but he frequently warned him of the hostile intentions of his countrymen. This hostile disposition soon became apparent. A party of men sent out in boats to hunt and to explore the island discovered a multitude of natives assembled on a precipitous, rocky island a short distance from the coast. Shelikhof gives the number of these as 4,000, an evident exaggeration. Thinking that such an assemblage could not be without some special object Shelikhof resolved to send to the island a deputation to invite the natives to trade with the Russians and to live at peace with them, but the only answer made by the savages was a threatening demand that the navigators should immediately leave the island and never dare to approach it again. Upon this reply Shelikhof himself proceeded to the spot and endeavored to persuade the savages to assume friendly relations with himself and his men, declaring that he had come with no hostile intention, but was actuated by a sincere wish to benefit the people of the country. His words, as they were explained to the natives by the interpreters, had no visible effect, and a few arrows were discharged from the multitude, causing the boats to retreat to the ships. Measures were taken at once for defense in case of sudden attack. A few days later, in the middle of the night, the savages approached the harbor unnoticed and threw themselves upon the Russians. The battle lasted until daylight with great slaughter on both sides, for the necessity of self preservation caused the promyshleniks to fight with extraordinary bravery, and at last the enemy, though vastly superior in numbers, was put to flight. This first victory did not by any means avert all danger, as it was reported by one of the natives who had come over to the side of the Russians that the savages were only waiting for considerable reinforcements from a neighboring tribe, and were fully resolved to renew the attack upon the intruders and to exterminate them to the last man. Under such circumstances Shelikhof resolved at once to attack the main stronghold of the enemy on the rocky island. With a picked crew of promyshleniks he attacked the savages in a position deemed by them impregnable, and after a few discharges from his iron 2-poundsers stormed the place with such impetuosity that the enemy became completely demoralized, jumping over the precipices into the sea, and surrendering in large numbers to the Russians. This victory was achieved at great sacrifice in killed and wounded on the part of the Russians. The prisoners taken were located at a distance of fifty versts from the harbor and furnished by Shelikhof with provisions and hunting-gear. In order to secure their allegiance twenty children of the most prominent among the captives were taken as hostages on board the ships. Occasional attacks were made after this upon hunting parties at a great distance from Shelikhof's headquarters, but the invaders had attained such a moral supremacy over the people that no further combined or organized opposition was offered.

As soon as Shelikhof found himself relieved from anxiety concerning the safety of his small command he began the organization of his colony and a systematic exploration of the surrounding regions. He dispatched one expedition in four large bidars, carrying fifty-two Russians and eleven natives of the Aleutian islands, and accompanied by 110 natives of Kadiak, each in his own canoe. The command proceeded along the northern side of Kadiak island, and crossing the strait dividing the island from the Alaska peninsula (subsequently named after Shelikhof) explored the coast of the mainland to the northward as far as the mountainous coast of Cook's inlet, inhabited by a different race. The expedition met with no opposition, which was probably due to its numerical strength more than to an actual liking of the natives for their visitors. A few hostages were brought back to Shelikhof's headquarters, but the trade carried on in the course of this exploration was of insignificant proportions. This large party on its return was located at Karluk, on the western side of Kadiak, and from here the hunters ranged north and south throughout the winter in active pursuit of the sea-otter. The promyshleniks remaining under Shelikhof's immediate command also made explorations of the island in various directions, taking hostages from every village and establishing trade among the natives. One small party advanced as far as Shniak, the northernmost island of the Kadiak archipelago, where friendly relations were established with the native chief; the latter succeeded in gaining the fullest confidence of the Russian leader, and was furnished with quite a large quantity of goods for trade, with the understanding that he was to act as Shelikhof's agent. The selection was an unfortunate one, as the chief not only retained the goods for his own use, but killed the men who were sent to look after the business, and then formed an alliance with the Kenaitze, on Cook's inlet, who sent him a force of nearly a thousand men to join in a combined attack on Shelikhof's fortifications. When this news was received at Three Saints bay, at the beginning of the year 1786, Shelikhof at once dispatched two parties to meet the enemy, one consisting of promyshleniks alone, and the other of friendly natives of Kadiak and Aleutians. They were instructed to disperse the approaching enemy and to establish a fortification on the island of Afognak, adjoining Kadiak. At the end of the season reports arrived from the north to the effect that the objects of the expedition had been accomplished, and that a lodgment had been effected, not only on Afognak, but on the coast of Cook's inlet, after severe chastisement of the hostile Kenaitze inhabiting that region.

Another exploring party was sent to Prince William sound, with orders to proceed as far as cape Saint Elias, located by Bering in his second voyage, now known to be the southern end of the island of Kaiak. As a business venture this last enterprise was not very successful, the inhabitants of Prince William sound and the Copper River delta showing decided aversion to intercourse with the Russians; and apparently the only result of the enterprise was the erection of crosses and various other signs at different points of the islands and sea-coast for the purpose

of notifying explorers of other nations that the coast had been taken possession of by the Russians. Both Spanish and English vessels had been in the same vicinity many years previous, and had taken formal possession, leaving the usual marks of notification. All these were carefully removed by the Russians before planting their own. The same geographical farce was enacted again at the time of Vancouver's cruise in the waters of Prince William sound, when, on several occasions, the English discoverer took formal possession of one side of an island while the Spaniard erected his crosses on the other side, and at the same time the Russians, already permanently established, moved quickly about from place to place in their light, skin-covered boats, removing the marks of possession as fast as planted, and substituting their own.

At his headquarters in Three Saints bay Shelikhof labored faithfully to enlighten his captives and hostages and to convert them to the Greek Catholic faith. His arguments were of a practical nature; he showed them the advantages of living according to the customs of Christianity and civilization, and the poor miserable savages were only too glad to be allowed to partake of such rude comforts as the Russian traders could boast, and in return for these advantages were always willing to go through any ceremony Shelikhof chose to perform. Nearly all the captives and many of the visitors from the neighboring tribes and villages were baptized and duly counted as members of the orthodox church, and at the same time a school was established for children and adults, in which the pupils were instructed in a few rudiments of education.

Shelikhof, according to his own account, took particular care to tell these people the most marvelous stories concerning the goodness, power, and benevolence of the empress of Russia, representing it as the highest privilege to be one of her subjects. He had with him some wretched portraits of the imperial family, and as these were the first examples of the painter's art ever beheld by the natives, they made considerable impression upon their minds. Shelikhof's wife also did her part in the work of civilization, instructing the girls and the women in needlework and such household arts as could be of any use to the savages.

In the month of May, 1786, the ship Three Saints had been repaired and fitted for the return voyage, and having conviued himself that all that could be effected in establishing and fortifying his headquarters in the newly-discovered district had been done, Shelikhof resolved to take his departure, in order to obtain more private means as well as government assistance and suauetion for his enterprise. He sailed on the 22d of May, and just as his ship was leaving the coast the long-lost sister ship Saint Michael appeared in the distance. It appeared from the commander's report that this unfortunate vessel had been nearly three years making her passage from Kamchatka to Kadiak, a distance of about a thousand miles. After promptly relieving the incapable commander Shelikhof ordered the ship to assist in an organized exploration of the coast in company with the remaining vessel of the fleet; one of the vessels to visit the northern coast of the peninsula and proceed thence northward as far as Bering strait, while the other was to survey the coast from Kadiak eastward.

Shelikhof himself arrived at Kamchatka on the 8th of August and proceeded at once to Okhotsk, reaching that port in January, 1787. He had taken from the islands 30 natives, who subsequently accompanied him to Irkutsk. He at once submitted to the governor-general of eastern Siberia a detailed report of his discoveries, with charts of the islands and plans of the fortifications and stations established, asking for instructions for the future conduct of the enterprise; and he made the bold statement that by his labors 50,000 subjects had been added to the Russian empire, ready to do homage to the empress and to accept the Christian faith. If he had divided this number by ten he would have been nearer the truth. He stated to the governor-general that without the approval of the empress his labor would be in vain, as he had acted with the sole purpose of doing his humble share in the extension and aggrandizement of his country and in securing the discoveries made by Russians against the encroachments of other powers, and upon his urgent representations Jacobi, the governor-general, forwarded his reports and charts to St. Petersburg.

In the meantime Golikof, Shelikhof's partner, had paid a visit to his home in the city of Kursk. The empress happening to pass through the place on one of her voyages through the empire, Golikof seized the opportunity to present himself before her and to display the maps and charts of his partner. The empress was at once interested, inquired into the doings of the firm in all its details, and gave orders that Shelikhof present himself in person at the palace as soon as he came to St. Petersburg. Immediately after the return of the empress to the capital two expeditions were organized for the exploration of the new discoveries in the far east. One of these was to proceed by sea from the Baltic, with Kamchatka as the objective point, and the command of the enterprise was given to Admiral Mervovsky. The other expedition was to be fitted out at Okhotsk, under command of the English Captain Billings, who was to give special attention to the American coast. The first expedition did not sail, on account of a declaration of war between Sweden and Russia at that time, while the second was delayed until the year 1790.

The governor-general of eastern Siberia was at once instructed to report the best means of fostering the commercial enterprises in the Pacific ocean, and of maintaining Russian supremacy over the new discoveries; and he was also to report a system of management of the native tribes, in order to extend to them the benefits of Christianity and civilization, and to improve their mode of life.

In order to secure Russia's possession of her new discoveries Jacobi considered it sufficient to send at once 30 large copper plates with the Russian coat-of-arms, and as many wooden crosses with the inscription, "Land in Russian possession." The greater part of these were to be turned over to the agents of Shelikhof and Golikof, who

were already acquainted with the best localities for planting such tokens. With regard to the amelioration of the condition of the natives the governor proposed that the tribute theretofore levied by Cossacks accompanying the traders, or by the latter themselves, should be changed to a voluntary tax, left to the determination of the native chiefs. At the same time Jacobi expressed the opinion that as long as every Siberian trader was allowed to roam at will over the islands and coasts of the Pacific ocean the natives would always be at the mercy of these men, who carried with them crews composed of the worst elements to be found among Siberian convicts and desperadoes. He called attention to the humane and patriotic manner in which Shelikhof had conducted his enterprises and explorations, and to the fact that he had baptized many of the pagan natives and had done his utmost to instruct both children and adults, always proclaiming that everything he did was done in the name and for the glory of her majesty the empress; if, therefore, the regions incorporated with the empire through the efforts of these men were left under their control, the interests of both the crown and the new subjects would always be duly considered, while the lawless horde of Siberian promyshleniks and convicts would be driven from the country, and thereby the most fruitful cause of strife with the natives removed forever. Jacobi was very eloquent in urging the empress to confer exclusive privileges upon the company represented by Shelikhof and his partners; but his ardor in the matter was to a certain extent explained by the subsequent appearance of his name among the shareholders of the company.

Upon the receipt of Jacobi's report and propositions, and the petition of Shelikhof and Golikof concerning their proposed further extension of trading operations over the islands of the Pacific and the coast of America, the empress at once instructed the department of commerce, through its president, Count Chernyshev, to make a thorough examination of all subjects pertaining to the condition and trade of those localities, and of the means of extending Russian commerce in the Pacific ocean. The committee on commerce presented, in March, 1788, the following opinion:

The important results obtained through the organized exertions of the Shelikhof company deserve not only the approval of the government of the continuance and extension of those operations, but also the most active assistance, especially taking into consideration the great expenditure incurred by the company who has already invested 250,000 rubles without any prospect of speedy return, and whose expenses in the immediate future cannot be estimated at less than 200,000. The prosecution of Shelikhof's enterprise is of the highest importance at the present time, on account of the interruption of our trade with China, which latter circumstance involves great loss to the whole of Siberia and has a pernicious influence on all Russian commerce. The goods and manufactured articles intended by the Russian merchants for the Chinese trade are now blocking up warehouses without bringing any returns, and no profit can be realized upon the capital thus invested. The articles which Russia has carried to China in order to obtain tea and nankeen are partially obtained from other powers, and a loss in this direction involves a rise in the price of exchange. Finally, the high prices of all stores and provisions needed for fitting out expeditions to the islands of the Pacific and American coast would alone justify the company to ask for some assistance from the government, without which the operations would be necessarily limited. In consideration of the facts stated the committee takes the liberty to represent to her majesty that it would be well, in accordance with the request of Shelikhof and Golikof, to place to their credit from the public treasury the sum of 200,000 rubles for twenty years, without interest, the capital to be returned in instalments at convenient intervals; the sum should also be exempt from taxation. This favor would enable the company to resume their enterprise in the most vigorous manner and thereby to revive trade and traffic throughout the eastern portion of her majesty's dominions. The government would always be in a position to reimburse the treasury by levying a duty of 10 per cent. on goods and furs crossing the border.

The committee recommends action upon the propositions of Governor-General Jacobi in accordance with his plans, but to him should be left the appointment of commanders of fortifications established in the new regions.

An addition was made to this report on recommendation of the committee in behalf of Shelikhof and Golikof, which resulted in the following imperial ukase, issued September 28, 1787:

In consideration of the services rendered by the merchants Shelikhof and Golikof to the advantage of the imperial government in the discovery and settlement of unknown countries, and the establishment of commercial intercourse with native tribes, we most graciously present to each of them a sword, and a gold medal to be worn around the neck, with our portrait upon one side and a legend on the other, stating the reason for which the decoration was conferred. The usual letters of transmittal and commendation to accompany these awards.

Signed by us and countersigned by the president of the senate.

On his return to Irkutsk Shelikhof at once ordered the equipment of two vessels for the voyage of discovery—one being destined for the Kurile islands and the other for the American coast and the Aleutian islands, with the intention of establishing a settlement as far south on the coast of the mainland as possible. In the year 1787 he dispatched another vessel from Okhotsk with supplies for the stations of his company already established on the islands. In 1788 the ship Three Saints sailed under instructions issued by Dclarof, a Greek, who had been to Kadiak as manager of the Shelikhof colony. Two experienced sailors, Ismailof and Bochorof, were in command of this expedition. In the month of May the ship arrived in the gulf of Chugatch, or Prince William sound, where quite a trade was carried on with the natives of that vicinity; and as the price paid for a sea-otter skin at that time consisted of eight or nine needles and three or four small beads, the traffic must have been profitable. The two explorers entered the bay of Nuchek and remained at anchor for some time in one of its many coves, which they named after Saints Constantine and Helena. All the chiefs of the neighborhood who came to visit the Russians were duly decorated with copper and bronze medals in accordance with instructions from Jacobi, but it was found impracticable to place the copper tablets claiming possession for the Russian empire in any prominent position, on account of the thieving propensities of the natives, who would seize immediately upon any scrap of metal within their reach.

From Nuehek the ship proceeded to Yakutat, or Bering bay. Here the head chief also received a medal and, at his earnest request, a portrait of the prince heir, the grand duke Paul Petrovich. According to Bochorof's account the chief was exceedingly proud of this piece of art, but when another explorer visited the vicinity, only a year later, not a vestige of the portrait could be found, and the natives stated that immediately upon the departure of the Three Saints the grand duke's image had been burned with great festivities and rejoicings. This expedition also entered Lituya bay, which had two years previously been visited by La Pérouse, and named Port des Français, the French explorer being ignorant of its earlier discovery by the Russians. Though the Russians most certainly had learned from the natives the disaster which overtook at that place two of the boats of La Pérouse, not a word of this or any other particular concerning the French visitors was mentioned in the official reports of Shelikhof's company, the ignorant traders imagining that they could keep the fact of La Pérouse's movements from their own government. In the following year Ismaïlot alone explored most thoroughly the gulf of Kenai, or Cook's inlet. In the meantime an additional discovery had been made which increased the anxiety of Shelikhof and his partners to obtain from the government the exclusive right of trade on the American coast.

The skipper Gerassim Pribylof had succeeded, after several vain attempts, in finding the summer resort of the fur-seals, first on the island of Saint George, and in the following year on Saint Paul. Small numbers of these seals had been killed annually during their passage up or down between the islands of the Aleutian chain, and the skins had found a ready market on the Chinese border; but when Pribylof and his companions returned with the marvelous tale of millions of these animals congregating on two small islands, easy of access, this branch of the trade became at once of the highest importance. To secure the overland trade with China was a question of life and death with the Siberian merchants, but as they could not compete with the staples and manufactured articles introduced into the celestial empire by England and Holland by sea, the trade had been declining and languishing for years. This new discovery, however, caused a sudden change in the aspect of commercial affairs on the Chinese border. The celestials prized the skin of the fur-seal above any other. They had known this kind of peltry from time immemorial—probably through shipments made from the coast of Japan—and had long since discovered a process of removing the hair and dyeing the fur in various colors. With an almost unlimited supply of this article at their command the Russian merchants could have their choice of Chinese staples most salable in the marts of their own empire.

During the few years of the existence of the Shelikhof company, with partial protection of the empress and the exclusive privileges in the discoveries made by their own navigators, nearly all the smaller companies had gradually gone to the wall. It was not always the power conferred upon a great firm by its larger capital that gained the day in a spirited contest for a valuable trade; it frequently occurring that the employés of one company resorted to force of arms in order to obtain advantages over the others, and then, of course, the strongest company was sure to win. The only rival of Shelikhof and his company during this last period of free trade was the company named, after two of its principal shareholders, the Lebedev-Lastochkia company. The stations of this company were located on both islands and mainland, often in close vicinity of those of their rivals, and even Captain Pribylof was in their employ when he made his important discovery; but the shrewd Shelikhof had long since bought up under various names a large number of shares in the rival company, and thereby succeeded in reaping the benefits of the discovery for himself and his own company. At home in Siberia there existed apparently the best understanding between the leading spirits of the two companies, but in their field of operations on the coasts and islands of America a bitter strife was kept up between their respective agents. This state of affairs appears all the more strange when we consider that Shelikhof was by no means the only one who held shares in both concerns; as, among others, Lebedev was almost equally interested in both companies. In spite of these circumstances the quarrels and hostile encounters between the traders increased from year to year, until on Cook's inlet the depredations committed and the raids made by one party of hunters upon the other acquired such dimensions as almost to deserve the name of warlike operations. A native Siberian by the name of Kolomin had established himself for the Shelikhof company at the site of the present Kenai, or Rédoute Sainte Nicholas, where he lorded it over the natives with great severity and wanton cruelty. A Russian captain of the rival company, named Konovaloff, drove him out of his fortification and caused him to build up a new settlement some 20 or 30 miles to the southward. The conqueror in this conflict, however, had no sooner begun to attend to his trade with the natives, and to send out hunting parties and explorers, than his vanquished enemy seized the opportunity to make night attacks upon any small detachments sent away to a distance from the fort; and in many of these enterprises Kolomin was assisted by the natives of the warlike Kenaitze tribe. Both parties had traders and hunters on Prince William sound, on the other side of the Kenai peninsula, and hostilities soon broke out in that region also. This fighting between the Russians had, of course, the most pernicious effect upon the natives, who seized upon every opportunity to fall upon the vanquished in the various encounters and kill or capture all that had been spared by the stronger party.

At this time of general anarchy, and when the very existence of the Russians in these distant regions was threatened, a new character appeared upon the scene. Shelikhof recognized that without the strong hand of some experienced man at the head of their enterprise in the colonies the business would soon prove a total loss, as every branch of it was then declining, and he finally selected a merchant from the town of Kargopol by the name of Baranof, who had displayed extraordinary energy and decision in the management of his own affairs in Siberia. Shelikhof

approached him several times with requests to enter the employ of his company, but being in business for himself Baranof, who had an independent spirit, always declined, until finally he met with overwhelming losses in his own enterprises, having two or three of his trading caravans destroyed and plundered by the savage Chukches in the vicinity of Anadyrok. Shelikhof at once called upon the ruined trader and offered him ten preferred shares of his company for his services. A contract was concluded on the 18th of August, 1790, and the man who finally established the Russian empire on our North American continent sailed for his new field of action.

The Russian government was fully acquainted with the results of Cook's voyages and his visits to the northwestern coast of America. He had in 1778 taken possession of various points of the coast on Cook's inlet and Bristol bay, and had made a brief stay on the island of Oonalashka, where he tarried a few days for the purpose of restowing his cargo. Prince William sound had been visited later by Portlock, Dixon, and Meares, who also extended their trading operations to Cook's inlet and even to Kadiak island. The Spaniards also had determined the astronomical positions of many points in that vicinity, and given names to a few bays and islands. Apprehensive that such attempts might be renewed in greater force the imperial government had enjoined the Shelikhof company to prevent, if possible, the seizure by foreign powers of any of the territory then occupied by the Russian traders, while Baranof was furnished with the most minute instructions upon this subject, calculated to guide his actions under any emergency that might arise in such a way as to secure the actual or imaginary rights of the Russian government in the Pacific ocean. The English establishment at Nootka, on Vancouver island, was considered as especially threatening to Russian interests, and Baranof was instructed to push his establishment southward in that direction as far as possible, and even to occupy Nootka itself if it lay in his power. Every vestige or mark of foreign occupation was to be destroyed and replaced by the copper tablets previously mentioned.

The first difficulty Baranof found himself obliged to cope with was the hostile attitude of the rival traders on Cook's inlet, but he made short work of these; both Kolomin and Konovalof were seized, placed in irons, and sent to Siberia for trial, and their followers were scattered over the various trading-posts of both companies in such a manner as to make it impossible to communicate with each other. A cruel chastigation with the knout was inflicted in most cases, in order to impress the wretches with the fact that the reign of lawlessness was at an end and that the promyshlenik no longer ruled the land.

Though small of stature Baranof was possessed of a physique of extraordinary strength and great power of endurance. He was an indefatigable traveler, and had a natural talent for management and organization. As soon as he arrived on Kadiak island he discovered that the headquarters selected by Shelikhof were not adapted to the requirements of the larger scale of operations he had in view, and took steps at once to remove the principal establishment to the harbor of Saint Paul, on the northeasterly end of the island, where the settlement of that name is now located. There he had timber at hand sufficient for all the buildings of the company, and an ample harbor with many outlets, allowing ships to depart and enter with almost any wind.

As soon as the foundation was laid to the new central establishment at Saint Paul harbor Baranof returned with renewed vigor to the exploration of the adjoining coast. The skipper Bocharof was dispatched with a party of 30 men in a large skin-covered boat to examine the northern coast of the Alaska peninsula, and began his exploration at Issanakh strait, between the southern point of the peninsula and the island of Oouimak. He followed the coast of the mainland northward, and was well received by the natives of the few scattered villages he encountered on his way. Late in the season Bocharof's expedition arrived at the mouth of the Kvichak, the outlet of lake Ilyamna. The chief of the populous village located here treated the new-comers with the greatest consideration, and expressed his willingness to give hostages and live at peace with the Russians forever after. The approach of winter and the lack of fresh provisions, together with the appearance of scurvy among his men, caused Bocharof to make an effort to return to Kadiak. His native friends told him of a portage route across the peninsula; this he followed, discovering at that early day the quickest and safest means of communication between the strait of Shelikhof and Bering sea, and he returned to Saint Paul harbor at the beginning of winter with a large quantity of furs, walrus ivory, and deer-skins. Baranof himself had set out early in the spring of 1793 in two large skin-boats with 30 men in the direction of Cook's inlet, but finding the yield of sea-otters in that vicinity decreasing, he made his way around the Kenai peninsula into the waters of Prince William sound, where he entered into friendly relations with natives of all the coast villages, taking hostages from them; and at Nuehek harbor he encountered Ismailof, the commander of the Saint Simeon, who had been cruising in search of new discoveries. After dispatching a portion of his command to the island of Sukluk (Montague) Baranof prepared to encamp on the island. Just at that time a large force of Kolosh Indians appeared in the harbor bent upon avenging some real or imaginary insult offered to one of their tribe by the Chugach Innuits. Observing the small force of Russians, they concluded to combine revenge with profit by taking possession of the stores and trading goods belonging to Baranof. In the middle of the night they surrounded his bivouac, and under cover of darkness succeeded in throwing themselves upon the tents before the alarm was given. The panic created among the Aleutians of Baranof's party added much to the confusion, and everybody was groping for arms and ammunition in the dark, scarcely knowing in which direction to shoot, or able to discern a friend from an enemy. At last toward daylight the superior arms of the Russians prevailed, and at the same time reinforcements arrived from Ismailof's

ship. Twelve dead bodies of the enemy were found on the field; their wounded they had carried away with them. In Baranof's party two Russians and nine Aleuts were killed and over fifteen wounded. The commander himself wrote of the occurrence in the following words:

God preserved me, though my shirt was pierced by several spears, and the arrows fell thick, without doing much damage. I was awakened from a sound sleep and had no time to dress, but as soon as I had emerged from my tent I knew that we should be able to beat them.

As early as 1791 Shelikhof had conceived the idea that, in order to convince the Russian government of the company's intention to permanently settle and develop the newly-discovered country, it would be wise to construct a few ships in the colonies to ply between the new settlements and Okhotsk or Kamchatka. He acted upon this idea at once, and in the autumn of the same year dispatched to Kadiak in the ship Northern Eagle, under command of Lieutenant Shields, a cargo of iron, cordage, canvas, and other materials for ship-building. The captain of the vessel was a practical shipwright who had left the English naval service and entered the Russian army. Shelikhof, always looking about for the best means to advance his colonial enterprise, discovered the fact of Shields' practical knowledge of ship-building and engaged his services at once. As soon as he had the means at hand Baranof selected a bay in Prince William sound as his future ship-yard, the harbor being named Resurrection bay. Timber of the largest size abounded in its immediate vicinity, and under Baranof's personal supervision and Shields' practical management a ship was completed in the summer of 1794. This craft had two decks, three masts, a length of 73 feet by 23 feet beam and 13½ feet depth of hold; she measured 180 tons, and was named the Phoenix. This was certainly the first three-masted ship ever built on the northwest coast of America. Having no paint or tar, Baranof was obliged to cover the new craft with a coating of spruce-gum, oiler, and whale-oil. As soon as the Phoenix was launched the keels of two smaller vessels 40 feet in length were laid, and these also were finished the following year and named the Dolphin and the Olga.

By this time Baranof's operations had been extended beyond Yakutat or Bering bay, and he was reaping a rich harvest of sea-otters in that vicinity, principally by means of his own hunting parties of Inuits from Kadiak and Oonalashka.

The two ships of Captain V. Leouwer, the Discovery and the Chatham, cruised in Cook's inlet and Prince William sound during the summer of 1794, but the great English explorer never succeeded in meeting Baranof, in spite of repeated efforts. Baranof had his instructions to keep out of the way of foreigners, and to give no unnecessary information concerning the company's business or the intentions of the Russian government. At the same time he was afraid that Shields, the Englishman, might be induced to leave him should he meet with his countrymen. His desertion would have been a great misfortune indeed, and would have nipped in the bud all schemes of naval construction for the future. Baranof succeeded in preventing a meeting, though a few letters passed between officers of the Discovery and the English shipwright.

Another important event of the year 1794 was the arrival of the first mission of the Greek church in those waters. For several years the astute Shelikhof had petitioned the government to dispatch priests and missionaries to the new settlements, stating that his own efforts to spread the gospel among the pagan natives must necessarily be limited, and that he should not feel safe among such numerous savage tribes unless the peaceful doctrines of Christianity were inculcated and preached among them. In a special ukase, dated June 30, 1793, the empress, Catherine II, instructed the metropolite Gabriel to select the best material for such a mission, and in the following year the archimandrite Iavassof, with seven clergymen and two laymen, was despatched to the island of Kadiak from Okhotsk on two vessels. At the same time Shelikhof had asked that a certain number of Siberian convicts, especially mechanics and farm laborers, with their families, might be selected to establish an agricultural settlement on the coast of America. This request was also granted by the empress Catherine in a ukase dated September 1, 1793, and the whole force, numbering over 200 persons, arrived at Kadiak together.

Of the convict settlers Shelikhof retained four families at Okhotsk, with the intention of sending them to the Kurile islands, and the remainder were to be settled in the vicinity of Yakutat, but the best mechanics and laborers among them were picked out for service at the various stations of the company before the colonists reached their destination.

The members of the mission at once began work at Kadiak and went forth to preach in various directions. One of them, named Makar, went to Oonalashka and converted and baptized within a few years nearly the whole of the Aleutian tribes. Another missionary, the monk Juvenal, proceeded northward to Cook's inlet and from there to the Ilyamna region, where he was finally slain by the natives for too active interference with their polygamous practices; while a third, named German, established a school on Spruce island, in Saint Paul harbor, where he lived for over forty years, instructing native boys and girls in the Christian faith and in agricultural and industrial pursuits. The other ecclesiastics remained in the immediate suite of the archimandrite, and a few years later accompanied the latter to Irkutsk, where he was ordained as bishop for the new Russian possessions on the Pacific. While returning with his new honors from Okhotsk the ship foundered at sea with all on board, and was never heard from again. This was the vessel constructed by Baranof in 1794. From that early time Russian clergymen and missionaries have never been absent from Alaska, but the number of actual communicants of the Greek orthodox churches has never exceeded 10,000 at any one time. In the course of the present century seven organized parishes and three mission stations were established, the latter all located on the mainland.

Shelikhof lived only long enough to see verified his prediction of a revival of the Chinese trade by means of the introduction of fur-seal skins. Commercial transactions at Kiakhta had almost wholly ceased for many years, but in the year 1794 the Chinese government notified the governor of Siberia that the merchants of the celestial empire were anxious to resume their operations on the border, and at the same time new privileges were granted to the Russians in conducting the intercourse. In the following year, on the 20th of July, 1795, Shelikhof died at Irkutsk, a few days after the receipt of a patent of nobility from the empress conferred in consideration of his services to his country; but his widow continued the management of the company's business. It had been a favorite scheme of her husband to effect the union or consolidation of the various companies trading in eastern Siberia, Kamchatka, and the American colonies, a scheme which was also favored by Ivan Golikof, one of the partners; and when the widow assumed control of the common business she used her influence to carry out her husband's wishes. The consolidation was finally effected in the year 1797, and the new firm, under the name of the Russian-American Company, obtained a charter from the Russian government granting it the exclusive right to all the territory and the resources of water and land in the new Russian possessions, including Kamchatka, the district of Okhotsk, and the Kurile islands. This charter, which was finally (1799) granted by the emperor Paul, who had at first opposed the creation of such a monopoly, marks an epoch in the history of Alaska, which from that time until the transfer of the country to the United States became identical with that of the Russian-American Company. The privileges conferred by the charter were very great and of the most exclusive nature, but at the same time the company was burdened with some heavy obligations, being compelled to maintain at its own expense the government of the country, a church establishment, a military force, and at various points in the territory magazines of provisions and stores to be used by the government for its naval vessels or troops whenever it was necessary. At a time when all such stores had to be transported from Russia overland through Siberia this was the most burdensome clause of the charter, and numerous petitions were forwarded by the company to be relieved from its provisions. Under this charter the company paid no royalty or rent to the government, but the treasury was in receipt of large sums in the shape of duty on teas carried by the company over the Chinese border. The records show that in some years as much as two million rubles were paid by the company to the government for these duties alone. The company was also obliged to make experiments in the establishment of agricultural settlements. The natives were freed from all taxes in skins or money, but those who were under its control were obliged to furnish a certain quota of sea-otter hunters to the company every season; all men between the ages of eighteen and fifty being liable to this duty, but not more than one-half of this number could be called upon at one time. The management of the company was placed in the hands of the administrative council, composed of shareholders in St. Petersburg, with a general office at Irkutsk and a chief manager residing in the colonies, who had to be selected from officers of the imperial navy of a rank not lower than post-captain. The chief manager had an assistant, who was also a naval officer, and each received a salary from the company independent of his pay from the government. As long as the company maintained a military or naval force in the colonies at its own expense such forces were entirely at the disposal of the chief manager; and the company also had the privilege of selecting the soldiers and sailors in its employ from any force stationed in Siberia, which gave it the opportunity of picking out such mechanics and tradesmen as were most useful in the colonies. The company was also permitted to purchase at cost-price powder, lead, and arms from the government works in Siberia. The chief manager had full jurisdiction over all offenders and criminals within the colonies, with the exception of capital crimes; offenders of that class were given a preliminary trial and then forwarded to the nearest court of justice in Siberia. In cases of mutiny or revolt the powers of the chief manager were absolute. The servants and employés of the company were engaged for a certain term of years, at the end of which time the company was obliged to furnish them free transportation to their homes, unless the unfortunate individuals were indebted to it, in which case they could be detained until the debt was paid. This privilege enabled the company to retain in the colonies any men among the lower class of employés whose services were desirable, as the miserable pittance allowed to the employés made it an impossibility to keep out of debt. Even among the higher officials were many who had served one period of seven years after another without succeeding in clearing themselves sufficiently from their obligations to the company to be allowed to return to their homes.

The charter was granted for a period of twenty years, counting from the year 1799. The company also had the right to carry its own flag, to employ naval officers as captains of its vessels, and to call itself, "under the highest protection of his imperial majesty, the Russian-American Company." In the meantime the new company began to attract considerable attention at St. Petersburg and Moscow, nobles and high officials of the government buying shares, and finally the emperor and members of the imperial family began to invest; the latter, however, making their investments under the pretext of donating their shares to schools and charitable institutions. It was the first enterprise of the kind in the Russian empire, and under imperial patronage rose rapidly in public favor. Its most sanguine supporters prophesied for it a future prosperity as great as that of the English East India Company; and many of the shareholders were dreaming of an annexation of Japan and perhaps portions of China on one side of the Pacific, and of the whole coast down to the gulf of California on the other.

A nobleman high in office and of very influential connections, Count Nikolai Rezanov, chamberlain of the emperor, had married a daughter of Shelikhof. His wife died two years after the marriage, but the count had

identified himself with his father-in-law's enterprise, and the final development of the company into the grand monopoly was chiefly due to his incessant exertions and his judicious advice to his mother-in-law, the widow of Shelikhof.

Baranof in the meantime had been very successful in extending the domains of the company. In the year 1799 he extended his operations to Sitka, a region which had been explored a few years previously by Captain Shields under Baranof's orders. Shields had met there two ships belonging to American traders, who informed him that both English and American vessels frequently obtained cargoes of sea-otter and other skins in that vicinity. Anxious to locate himself at a point where he could communicate with vessels of other nations and purchase supplies of them, Baranof made up his mind to establish himself permanently in the bay of Sitka or Norfolk sound, and proceeded to that locality in the brig Catherine, accompanied by a large fleet of Innuitt hunters and their bidarkas. With the assistance of these he secured over 1,500 sea-otter skins within a few weeks, and then began the construction of a fortified trading-post, the site selected for which was distant about 6 miles from the present Sitka. During the winter of 1799 and 1800 his whole force was busy erecting substantial log-houses and a high stockade surrounding them. In the spring of 1800 some American trading-ships made their appearance, and the owners carried on a brisk traffic under the very eyes of Baranof, who at once forwarded dispatches to the administrative council of the company, representing that the government must put a stop to such infractions upon their privileges. The strangers obtained most of their sea-otter skins in exchange for fire-arms, and paid no attention to Baranof's remonstrances. As soon as the Americans had left Baranof returned to Kadiak, where he found the employés of the company in a state bordering on insurrection. There had been disputes between officers of the company and members of the clergy, each declaring himself independent of the other, and the bad feeling had extended even to the ranks of the common laborers. No attention was paid to the orders of the company's agent in charge, and a few bold spirits had already commenced to fit out one of the small vessels of the company for the purpose of leaving for other climes, when Baranof returned and in a few days succeeded in restoring order, punishing the chief offenders with great severity. A man by the name of Larionof made an attempt to assassinate the chief manager, but Baranof seized his assailant's hand, wrenched his weapon from him, and strangled him to death with his own hands.

The loss of the ship *Phœnix*, which occurred about this time, interfered most seriously with Baranof's plans, as he stood in great need of both goods and men. The garrison he had left at Sitka was a small one, surrounded by numerous hostile tribes. He felt the necessity of re-enforcing his establishment there, while he saw himself powerless to send any succor of supplies or promyshleniks. Rumors of war with England had reached the colony and added to Baranof's perplexities. He set out at once on a round of the several trading establishments to warn the traders and give instructions how to act in case of the appearance of hostile cruisers. During his absence news was received at Kadiak of the destruction of the Sitka settlement by the natives, which disastrous event was the result of a preconcerted plan on the part of all the native tribes inhabiting the neighborhood. On a certain day, when over half of the small garrison was absent from the fortification hunting or fishing, a force of several thousand armed men surrounded the block-house, and, assailing it from all sides at once, soon gained an entrance. All the inmates, including the commander, Medvednikof, were massacred at once, and over 3,000 sea-otter skins were taken from the warehouse. Of the men who were absent at the time of the attack three Russians and five Aleuts succeeded in hiding in the woods until they could communicate with an English vessel anchored in the vicinity. Eighteen women who had been washing clothes in the river were taken and held captives by the Indians. The captain of the English vessel referred to, Barber by name, succeeded in enticing two of the most prominent chiefs on board of his craft and into his cabin. After feasting them at his table and plying them with drink he placed them in irons, and, having quite a battery of guns, was able to make his own terms for the release of his prisoners. These terms were the surrender of the captive women and of 2,000 sea-otter skins. After some hesitation on the part of the savages the conditions were accepted, and Barber sailed at once for Kadiak. Here the captain demanded of Baranof for his men and women a payment of 50,000 rubles for the time spent in rescuing them. With this demand Baranof could not or would not comply, and after many days an agreement was arrived at on the basis of the payment of 10,000 rubles.

Nearly at the same time with the Sitka disaster 180 Aleutian hunters were surprised and massacred at various points in the vicinity, and one party, consisting of nearly 100, perished almost to a man from eating poisonous mussels, in the strait separating Baranof from Chiechagof island, which derived its name from this disaster (the Russian name was Pogybshie strait, meaning "destruction" strait, not "peril", as it has been translated by American geographers). Attacks upon hunting parties were made at many other points along the coast inhabited by the Thlinket or Kolosh.

At this time one disaster after another overtook the Russian colonies in America. Three ships loaded with provisions and stores were wrecked on their way from Kamchatka, and the employés of the Russian American Company were on the verge of starvation, when an American ship arrived at Kadiak from New York, enabling Baranof to purchase a cargo, consisting chiefly of provisions, for 12,000 rubles. A portion of these supplies was at once forwarded to Yakutat and Sitka, while Baranof himself proceeded to Prince William sound to wind up the affairs of the Lebedev and other companies which were still represented by hunting parties in that region. In Prince William sound Baranof met Knskof, who had been in the vicinity of Yakutat in charge of a hunting party

of 300 canoes, and reported that he had repulsed an attack by the natives with considerable loss to the latter. He was still unaware of the disaster that had overtaken the new settlement of Sitka, but as soon as he heard of it from Baranof he proposed that they should both repair to the scene of action at once and inflict punishment upon the hostile Kolosh. The chief manager did not act upon Kuskof's suggestion, chiefly because the only vessel at his command was the Katherine, a schooner of less than 50 tons burden and but poorly provisioned, while Kuskof's hunting party had only just returned from a long voyage along the coast and a series of combats with the warlike Kolosh. Before returning to Kadiak Baranof visited his ship-yard on Prince William island and laid the keels of two more vessels to be employed in cruising along the coast occupied by the Kolosh for the protection of his hunting parties. At Kadiak he found dispatches from Siberia that had been saved from one of the wrecked transports and forwarded by canoes. A change of rulers had taken place in Russia, and Alexander I had succeeded the emperor Paul. The commander at Okhotsk, in making the announcement, forwarded an order to assemble all the natives of Kadiak and the "surrounding countries", in order to inform them of the accession of the new emperor to the throne and to demand from them the oath of allegiance.

Situated as Baranof then was, almost without provisions and unable to rely upon his few followers of Russian extraction, he thought it unsafe to assemble a large number of natives at his headquarters, where they would easily discover his temporary weakness, and consequently he did not carry out the order from Okhotsk. One of his subordinates, a Mr. Talin, who had been an officer in the navy, but was dismissed for bad conduct, sent a lengthy report on the subject to Irkutsk, making various other charges against Baranof in addition to his apparent disobedience of orders. The complaint was duly forwarded to St. Petersburg and laid before the senate, but that body decided that under the company's charter Baranof was not subject to any orders from the local commander at Okhotsk. An order for the dismissal of Talin was the result of the investigation; but, unfortunately for Baranof, the document was delayed nearly two years in transmittal through Siberia to the Russian colonies, and during all that time Talin succeeded in creating disturbances wherever he was stationed on the American coast.

Shelikhof had petitioned the Russian government some time before his death for permission to employ naval officers on leave of absence as commanders of his trading-vessels, but the request was granted only at the time of the consolidation of the various companies, a clause to that effect being incorporated in the charter of the Russian-American Company; and in the year 1801 two capable officers of the navy, Lieutenants Khvostov and Davidov, received permission to enter the company's service. Up to that time the ships sailing from Okhotsk and Kamchatka were managed by "morekhods", that is, "sea-faring men." This title was applied to anybody who had made a sea voyage, no matter in what capacity; but they were generally hunters or trappers from Siberia who had some slight experience in flat-boat navigation on the rivers. They were entirely ignorant of nautical science and unacquainted with the use of instruments, relying altogether upon land-marks to make their way from Asia to America. The most extraordinary instances of stupidity in managing their vessels are related of some of these so-called navigators. Once out of sight of land they were lost, and compelled to trust to chance in hitting upon the right direction to make the land again. It was the practice to coast along the Kamchatka shore until nearly opposite the Commander islands, and to wait for some clear day when the latter could be sighted; then the crossing was made, and, satisfied with such a brilliant result, the skipper would beach his craft for the remainder of the season, and pass the winter in killing fur-seals and sea-cows and salting down the meat for his further voyage. Late in the following spring, rarely before the month of June, the vessel was launched again and headed at a venture to the nearest islands of the Aleutian chain. If the captain succeeded in finding the land he would proceed along the chain of islands, keeping a short distance to the northward, careful never to lose sight of the mountain peaks. As the trapper captain with his crew of landsmen knew nothing of keeping his craft up to the wind, no progress was made unless the wind was absolutely favorable; and thus another season would pass before Atka or Oonalashka island was reached, where the craft was hauled up again for the winter. A term of seven years was frequently consumed in making the round trip to the American coast and back again to Kamchatka or Okhotsk, a voyage that at the present time a schooner can accomplish in about three weeks. At least 75 per cent. of all the vessels that sailed upon these voyages from the discovery of the American coast to the beginning of this century suffered wreck, and every one of these disasters could be traced to the ignorance both of captains and sailors.

The arrival at Okhotsk of the two naval officers above referred to forms an epoch in the history of Russian navigation in the north Pacific. They were both young and active and proceeded with great energy in their work of reform, their first voyage from Okhotsk to Kadiak being performed in the unprecedented time of two months, in an old vessel of wretched construction and without a single practical sailor in the crew. From that time forward the company always had numbers of naval officers in their employ, and in a few years their vast shipping interest was managed in the most systematic and economical manner.

In the year 1802 the company, through Count Rezanov, petitioned the emperor for permission to ship supplies to the colonies by sea from St. Petersburg. The request was at once granted, and a number of naval officers were detailed to navigate two vessels of between 400 and 500 tons burden, purchased by the company in London, and named the Neva and the Nadaishda; the former was commanded by Captain Lissiansky, and the latter by Captain Krusenstern. Rezanov himself was ordered to accompany the expedition in the capacity of government

inspector of the colonies and special ambassador to Japan, and was also invested by the Russian-American Company with the powers of its plenipotentiary agent in the colonies. He sailed on the Nadaishda and proceeded directly to Kamchatka on his way to Japan, arriving at Petropavlovsk in July, 1804, after a voyage of nearly a year. The Neva arrived at Kadiak at the beginning of the same month. Here learning that Baranof had already left his headquarters for another visit to Sitka, intending to rebuild his settlement and punish the savages, Lissiansky sailed at once for that place, being anxious to assist in the enterprise.

Baranof in the meantime had been delayed at Yakutat, fitting out two small sloops built during the preceding winter. His whole squadron consisted of three vessels, in all considerably under 100 tons burden, with about 40 Russians and several hundred Aleutian hunters, and with this small force he intended to attack the powerful tribes inhabiting the vicinity of Sitka, numbering several thousand warriors; but to his agreeable surprise he found the Neva anchored in the roadstead when he arrived at Sitka. He made a formal demand upon the chiefs for restoration of the furs stolen from the warehouse at the time of the massacre and for the surrender of a number of hostages as security for their future conduct. These demands met with prompt refusal, and hostilities began. A party of promyshleniks, Aleuts, and sailors from the ship, commanded by Baranof, made an attack upon a large fortified inclosure, but were beaten back with some loss; three sailors and eight promyshleniks being killed, and Baranof, Lieutenant Arbuzof, and Midshipman Povalishin wounded. The approach of night prevented further operations, but the following day the ships approached the beach and bombarded the hostile camp. On the next day another attack was made with the same result as before, but during the night following the savages abandoned their fortification and retreated to Chatham strait. With the assistance of Lissiansky and his men a fortification was erected on a steep, rocky eminence, the present site of the so-called castle in Sitka. Around this nucleus quite an extensive village sprang up within a few months, separated from the adjoining Indian village by a high stockade. Twelve cannon were planted at a point commanding the immediate surroundings as well as the entrance to the bay. As soon as Baranof had firmly established himself in his new position Lissiansky left for Kadiak, and there passed the winter; but in the spring he returned, and finally sailed for Canton with a cargo of furs valued at considerably over a million rubles.

Rezanof's mission to Japan proved an utter failure, as, after detention in one of the Japanese sea-ports for ten months, he was coolly informed that he could not see the emperor. He returned to Kamchatka, and from there proceeded to Kadiak and to Sitka in the year 1805. He turned his attention exclusively to the organization of the colonies and to bringing order and system into the affairs of the Russian-American Company, and was the first to put a check to the indiscriminate slaughter of fur-seals on the Pribylaf islands. When Rezanof in company with Baranof finally visited Sitka they found the magazines almost empty and famine staring them in the face. At last a ship from Boston made its appearance in Norfolk sound and brought much-needed relief. Rezanof bought both ship and cargo and employed the former to bring further assistance. In a few days he was on his way to California, the nearest coast from which grain or flour could be obtained, reaching the bay of San Francisco, after a long and stormy passage, in so wretched a condition that when the Spanish officers visited the ship Rezanof ordered the crew to be kept out of sight, in order to conceal as far as possible from the strangers the extent of their distress. It was against the colonial laws of Spain to hold any intercourse with foreign vessels, but Rezanof, with the assistance of the missionaries, succeeded in overcoming the scruples of the governor, and filled up his ship with grain, tallow, and meat; and after a stay of several months, during which he engaged himself to marry the daughter of the comandante of San Francisco, he sailed again for Sitka, with the intention of proceeding at once to St. Petersburg by way of Siberia, in order to ask the emperor's consent to his marriage with a foreigner.

Rezanof's visit to California was the beginning of commercial intercourse between the Russian and the Spanish colonies, of vital importance to the former.

The chamberlain had, during his sojourn in San Francisco bay, written to the emperor and to the directors of the Russian-American Company, submitting plans for the extension of the Russian domain and of the operations of the company in the direction of California. He spoke in glowing terms of the natural resources of the latter country, urging the establishment of an agricultural colony on the coast north of San Francisco, then called New Albion, stating, quite truly, that up to that time the Spaniards had no permanent settlement north of the presidio of San Francisco. With singular foresight he considered the fact that among the hunters and trappers in the Russian colonies it would be impossible to find laborers familiar with agricultural pursuits, and therefore suggested that the "patient and industrious Chinese" should be imported to labor on the Russian plantations; which proposal, made in 1806, is certainly the first on record looking to Chinese immigration to the Pacific coast.

Before his departure for St. Petersburg Rezanof laid the foundation of a very important change in the management of the company's affairs. Up to that time all employés had been engaged under the old system of allowing shares in the proceeds to all laborers; but Rezanof understood the inconvenience and injustice arising from such a system as the company's operations increased in magnitude, and he left positive orders with Baranof to introduce the payment of annual salaries to all employés as soon as practicable. On his way to St. Petersburg the chamberlain gave orders for the organization of an expedition, consisting of two ships under command of Lieutenants Kavastof and Davidof, against Japan, to avenge the slight put upon Rezanof and his embassy. His instructions were only partially carried out by the two officers named, who thereby involved themselves in the most

serious difficulties with the Siberian authorities. From Okhotsk Rezanof proceeded overland through Siberia, but was detained at various places by sickness and once by a fall from his horse; and his injuries, aggravated by disease, caused his death at the town of Krasnoyarsk, in Siberia, on the 1st of March, 1807. With him died the most earnest promoter of Russian interests in the north Pacific.

At the time of Rezanof's departure the chief manager reported that the Russian-American Company then possessed the following fortified stations: One at Three Saints harbor, one on Saint Paul island, one on Kadiak island, one off Afognak island, one at the entrance to Cook's inlet (Alexandrovsk), three on the inlet—Saint George, Saint Paul, and Saint Nicholas; and two on Prince William sound, one of them at Nechek and the other on Sukluk island, Zaykof bay. In addition to these there was the fort Saint Simeon, near cape Saint Elias; two forts in the bay of Yakutat, and finally New Archangel, in the bay of Sitka. The fortifications were nearly all armed with 3-pounder brass guns. The number of small arms, rifles, and shot-guns in the colonies was about 1,500.

The number of Russian employés was then 470, of which 69 were in the district of Oonalashka. Experiments in agriculture had already been made in nearly every section of the colonies, but without success except in the cultivation of potatoes, turnips, and cabbage. The small breed of Siberian cattle had been successfully introduced at Kadiak.

After the first expedition of the Neva and the Nadaishda the company continued to send supplies and reinforcements by sea from St. Petersburg. The former ship was fitted out immediately after returning from her first voyage under command of Captain Hagemeyer. The presence of naval officers in the colony had led to complications between the chief manager and the former, who were inclined to ignore any suggestions or requests made by a mere "civilian" or "kupetz" (trader). Complaints and charges arising from these difficulties were forwarded to St. Petersburg, and, upon Rezanof's suggestion, the emperor conferred upon Baranof the rank of "commercial councilor", in order to give him a certain official standing. The commission was accompanied with a gold medal and the order of St. Anne of the third class, for distinguished services. Baranof was, of course, highly gratified at his elevation and the recognition of his services by the emperor, but his promotion did not save him from endless disputes with government officers in the colonies; which continued until he left, and embittered his whole after life.

In the meantime the establishment of the Russians on the northwest coast had attracted the attention of American merchants, especially those of Boston, who began to send their ships to Norfolk sound and to Kadiak, laden chiefly with provisions most acceptable to the Russian colonists. In payment for such supplies they accepted fur-seal skins at the rate of \$1 25 (Mexican) each; these being subsequently disposed of in the Chinese sea-ports at an immense profit. Others entered into an agreement with Baranof to hunt sea-otters, with native hunters furnished by him, on equal shares. The field of operations for these enterprises was generally the coasts of California and Oregon.

In the year 1811 Baranof at last carried out Rezanof's suggestion and established himself on the coast a short distance north of San Francisco bay. His next in command, Kushkof, was dispatched with a number of men, and succeeded in effecting a lodgment at Bodega, where he obtained a tract of land from the Indians "by purchase". The Indians at the time declared that they were entirely independent of the Spaniards, who had never advanced northward from the presidio of San Francisco. The Spanish crown, as is well known, claimed a title to the whole northwest coast of America by "right of discovery".

At that time Baranof was annually extending his intercourse and joint ventures with the traders from Boston and other American ports. He had close at hand in the seal rookeries of Bering sea an almost inexhaustible treasury, furnishing the means to pay all demands of his foreign friends without making drafts upon the home office at St. Petersburg. When the Kolosh Indians of Yakutat had destroyed the company's settlement at that place Baranof employed the Boston captain, Campbell, with his ship, to intimidate the hostile natives into a surrender of a few captive survivors, and during a single year the company's share in sea-otter expeditions, undertaken in partnership with these Yankee skippers, along the California coast, amounted to 200,000 or 300,000 rubles. In many instances, however, these shrewd "partners" managed to secure to themselves the best of the bargain. Once a Captain Bennett sold his cargo of provisions and stores for fur-seal skins at the rate of \$1 each, and then sailed across to Kamchatka and sold the skins to the company's agent at Petropavlovsk at \$2 each. These and similar transactions were duly reported to the company's home office, accompanied by demands for the appointment of a successor to Baranof, who was represented as a mere plaything in the hands of the foreign traders, who got into his good graces by wineing and dining him in their cabins. The peculiar circumstances attending the attempt of Hunt, the agent of Astor, to negotiate with Baranof have been graphically described by Washington Irving in his sketch of Astoria.

The directors of the Russian-American Company became thoroughly alarmed at the reports of the large sums diverted into foreign channels from their own domains, and instructions were promptly forwarded to Baranof to change his policy. This communication was accompanied by the announcement that another ship, the Suvarof, commanded by Lieutenant Lazarev, was being fitted for a voyage to the Russian colonies. The vessel sailed from Cronstadt on the 8th of October, 1813, and arrived at Sitka November 14, 1814, having been delayed nearly four months in England waiting for a cargo. She had scarcely been moored at her anchorage when disputes arose

between her commander and the chief manager of the colonies, the question of relative rank being of course involved, and giving additional bitterness to the contest. Lazarev finally refused point blank to obey Baranof's orders, and sailed from Sitka without final instructions. In his rage Baranof discharged a few of his cannon after the retreating ship, without, however, doing any damage, and Lazarev proceeded to San Francisco, and thence to South American ports, buying up a valuable cargo of the products of the tropical climes, which met with ready sale in Russia. The value of the whole shipment by the Suvarof, including the furs, was estimated at considerably over a million rubles. In his reports to the emperor and to the directors of the Russian-American Company Lazarev reported the doings and character of Baranof to his disadvantage, and arrangements were made at last to select a successor.

A Doctor Scheffer had gone out to the colonies in the capacity of surgeon of the Suvarof, but during that vessel's stay in the harbor of Sitka the doctor had quarreled with the officers, and finally left the ship and placed himself under the protection of Baranof; the latter taking a great fancy to the foreigner, who could boast of great linguistic ability and a general polish acquired in a life of adventure. Through the medium of the Boston skipper's messages and presents had been exchanged between Baranof and King Kamehameha of the Sandwich islands. Scheffer seized upon this circumstance to work upon Baranof's ambition, and together, inspired by copious draughts of Sandwich Islands rum, they formed the scheme of colonizing and finally annexing those islands to the Russian empire.

Scheffer was dispatched to the island of Hawaii as diplomatic agent, provided by his ambitious patron with ample means and full powers. He found Kamehameha fully controlled by the English, but, nothing daunted, he proceeded to the island of Kaui, which was then under the rule of King Tomare, and endeavored to incite the latter to throw off his allegiance to Kamehameha and place himself under the protection of the emperor of Russia. With the assistance of quite a large force of Aleutian laborers Scheffer erected buildings and planted gardens and fields, the gift of Tomare, whose wife he had succeeded in curing of intermittent fever. This enterprise was maintained for several years, and, upon Baranof's earnest application, the company's authorities endeavored to enlist the imperial government in its aid. A magnificent gold-embroidered uniform, a general's chapeau, and some gold and silver medals were forwarded to Tomare from the court of St. Petersburg, but, fully aware of its weakness at sea, the Russian government refused to go beyond this in support of the company's enterprise. In the meantime English and American intrigue had been active at the court of Kamehameha, who finally took active measures to restore his supremacy over the rebellious Tomare. The latter became alarmed at the non-arrival of Russian re-enforcements promised by Scheffer, and at last compelled him to fly from the islands. Two ships belonging to the company's service had been lost while attempting to convey supplies to the Sandwich Islands settlement, and altogether the enterprise was attended with pecuniary loss of such magnitude as to draw upon Baranof the severest censure of the board of directors.

A life of dissipation, old age, and constant struggles with savages and his own scarcely less savage subordinates, as well as the irritating quarrels with government officers, began to tell upon Baranof's health. Ever since the year 1809, when two promyshleniks, Naplavko and Popof, had organized a conspiracy to kill Baranof, fit out one of the company's vessels with arms, provisions, and merchandise, and to make their escape to one of the South Sea islands, where they proposed to lead a life of perpetual bliss, the chief manager had given evidence of a broken spirit. The conspiracy was suppressed without bloodshed, one of the members having proved traitor, but its effect upon Baranof's mind could be detected in all his subsequent transactions. Twice the directors of the company had resolved to relieve him; and once, in 1808, they appointed Collegiate Assessor Koch to that position, but he died in Kamchatka before reaching his destination. Seven years later another officer of the civil service, Collegiate Councilor Bornovolokof, was sent out on the ship Neva, but the vessel was wrecked within a short distance of Sitka, and Bornovolokof lost his life. At last, in 1817, Captain Hagemeister was sent to Sitka in the ship Kntuzof, with instructions to relieve Baranof as chief manager of the colonies. He arrived in the same year, but did not introduce himself in his real capacity. He remained at Sitka inspecting and investigating the company's affairs until the 11th of January, 1818, when he suddenly produced his commission and ordered Baranof to turn over his command to him. The shock of this sudden revelation was too great for the old man, who began to fail more rapidly from that day. With the assistance of a few of his former subordinates he arranged his papers and transferred to Hagemeister both movable and immovable property far exceeding in value the amounts called for by the returns of the company. Though millions had passed through his hands he found himself at the age of eighty a poor man. Very much enfeebled in health, he sailed on the ship Kutuzof in the autumn of 1818. For some unexplained reason, Hagemeister, his successor, sailed on the same ship, leaving a Lieutenant Yanovsky in charge of colonial affairs. On the voyage home the Kntuzof was detained for some time at Batavia, and, against the advice of the physician, Baranof insisted upon passing that time on shore, where he was attacked with malarial fever, and with the greatest difficulty was taken on board when the ship was ready to sail. The following day, the 16th of April, 1819, the creator of Russia's domains on the north Pacific breathed his last.

Lieutenant Yanovsky, who had been left in temporary charge of the colonies by Hagemeister, did his best to carry out the wishes of the company concerning a thorough exploration of the territory, and expeditions were sent out by land and sea in various directions, resulting in the discovery and preliminary survey of the coast from Bristol

bay westward to the mouth of the Kuskokvim river and Nunivak island. One party of explorers even reached the vicinity of Norton sound, without, however, discovering the Yukon river, the mouth of which must have been passed by the boats of the expedition. Another exploring party proceeded from the mouth of the Nnshegak river into the interior, and succeeded in crossing over the mountains and tundras into the valley of the Kuskokvim.

The work of changing the company's system of hiring laborers on shares to the employment of men with fixed salaries was completed by Yanovsky under Hagemeister's direction.

Occasional intercourse was still carried on with the Boston traders, but not on its former scale of magnitude. In 1818 Hagemeister made a contract with a Captain Roquefeuille, who had been fitted out by several merchants of Marseilles for the purpose of opening the northwest coast of America to French trade. Roquefeuille saw at once that he could not compete with the Russian-American Company in opening trade, and therefore made an agreement with the Russian chief manager to hunt sea-otters on shares with the assistance of natives. He received thirty bidarkas (of two men each), under the condition that in case of loss of life or accident during the voyage the French captain was to reimburse the company or the hunters' families, the price of a life being fixed at \$100.

Two weeks after leaving Sitka Roquefeuille's ship was attacked by the Hyda Indians inhabiting the southern end of Prince of Wales island. He succeeded in beating them off, but a party of his hunters, consisting of twenty men and three women, who had landed some distance from the ship, were butchered by the savages. Roquefeuille made a few attempts to trade with the natives after this agreement, but his goods were of an inferior character and he failed to secure a single skin. He returned to Sitka, paid for the twenty-three lives lost, and sailed away, and on his arrival at Marseilles convinced his patrons that there was no field for French enterprise in the north Pacific.

The settlement established by Baranof on the coast of California had by no means remained undisturbed. When the Spanish authorities at San Francisco discovered that the Russians had located themselves permanently, they sent an officer with several men with a peremptory demand that the Russians should leave at once a coast claimed by the king of Spain. Knshkof, who was then in command, managed to postpone action in the matter on the plea of having no authority, and in the following year Baranof sent Lieutenant Podnshkin to the governor of California with a declaration that the company's colony was located on land purchased of the Indians, and that he could not withdraw it until the courts of St. Petersburg and Madrid had decided the question. At the same time he made proposals for a sea-otter hunt along the California coast on joint account of the Russian-American Company and the California authorities, offering the latter high prices for the skins. The offer was tempting, and, though officially declined, was privately accepted. The Russians remained undisturbed on their farms at Bodega bay, and the coffers of the Spanish officials and missionaries began to fill with the bright dollars received in payment for sea-otters killed by Indian hunters in Spanish waters. The principal motive of Rezanof in ordering the establishment of this colony had been to secure a depot of breadstuffs for the northern stations, but in this respect the enterprise proved a failure, owing to the very cause foreseen by the chamberlain.

The Siberians and the Aleuts were but indifferent farmers, and would go off on hunting expeditions just at the time when the ground ought to be plowed or the seed put in, and the consequences were short crops and a demand for supplies from Sitka. In cattle-breeding the Arctic farmers met with no better success. Large herds were purchased from the Spaniards, but the Aleut herdsmen were in mortal dread of the huge animals, unlike anything they ever saw at home, and at the least display of unruliness on the part of the cattle they would fly to the station, leaving their trust to the mercy of marauding Indians. Failing in these two objects the manager of the colony began to experiment in ship-building, using the wood of the live-oak and cedar covering the hillsides.

The privileges granted the Russian-American Company by the emperor Paul expired with the year 1820. The business of the company during the preceding twenty years had, on the whole, been very profitable, and the most strenuous efforts were made to get an extension of the privileges for another period of equal length, and owing to the fact that many nobles of high standing, and even members of the imperial family, were shareholders, this object was easily attained. The emperor Alexander I not only extended the old privileges but made some valuable additions to the rights conferred upon the company by the charter, and in the year 1820 the company reported the payment of a biennial dividend to the shareholders amounting to 1,195,495 rubles, while for the years 1816 and 1817 it had been 1,156,950 rubles.

The population of the colonies under full control of the company (exclusive of the independent native tribes) was given at 391 Russians, 444 creoles, and 8,384 natives.

The fleet owned by the company and engaged in traffic in the colonial waters in the year 1820 consisted of one brigantine of 306 tons, three brigs of 200 tons, two schooners of 120 and one of 60 tons; and three sloops, one of 60 and two of 30 tons each. In addition to these the company had purchased five foreign barks and ships for the voyage from St. Petersburg to the colonies, and eight others for service in the colonies.

In the year 1821 Hagemeister was relieved by Mikhail Ivanovich Muraviev, who continued the work of organization of the colonies and managed the company's trade. Hagemeister urged removal to the island of Kodiak, which offered a much more pleasant and comfortable place of residence than Sitka, but it would have been necessary to maintain quite a large force at the latter place to keep in check the warlike and unruly Kolosh. Up to the year

1823 the district of Atkha had been attached to the Okhotsk office of the Russian-American Company, but the impracticability of such an arrangement became obvious, and all the Aleutian islands were transferred to the immediate jurisdiction of the chief manager of the colonies, and from that time dates the separate existence and management of Russian America.

The boundary of the Russian possessions was finally settled under Muraviev's administration. The treaty was concluded between Russia and the United States on the 17th of April, 1824, and with England on the 28th of February, 1825, designating Prince of Wales island, in latitude $54^{\circ} 40'$ north, and between longitude 131° and 133° west from Greenwich, as the southern line of the Russian possessions, and as its eastern boundary a line running from the head of Portland canal northward along the summits of the coast range of mountains to a point where it intersects the fifty-sixth degree of latitude; from thence the line running to the Arctic ocean along the one hundred and forty-first meridian. Both English and American traders were allowed to trade for a period of ten years in the waters belonging to the strip of coast up to latitude 56° .

The principal explorations undertaken during this period were made in the northern precincts of Bering sea by two skilled navigators, Etholin and Kromchenko, the former of whom subsequently rose to the rank of chief manager of the colonies. Their surveys are still our best authorities for the coast-line included in their labors. An Arctic expedition had been organized as early as the year 1815, by Count Rmiantzof, at his own expense. He fitted out the brig Rurik, and placed in command Lieutenant Kotzebue, of the navy. The German poet and scientist, Adelbert von Chamisso, accompanied this expedition, which resulted in the discovery and survey of Kotzebue sound and the Arctic coast of America as far as cape Lisburne.

In 1826 Muraviev was relieved by Captain Chistiakof. In this period occurred the exploring-voyage of the sloop of war Seniavin, commanded by Captain Lütke, who subsequently compiled an atlas of the Alaskan coast and islands and published a valuable work describing the country.

The work of christianizing the natives of the Russian colonies had been prosecuted with increased vigor since the renewal of the company's privileges in 1821, and in 1823 the priest Mordovsky arrived at Kadiak with two missionary monks. In 1824 Ivan Veniaminov landed at Oonalashka, and in the following year Yakof Netzvetof took charge of the church at Atkha. Veniaminov especially was instrumental in spreading the teachings of Christianity over a vast extent of country, visiting not only the Aleutian islands, but also the coast of the mainland from Bristol bay westward beyond the Kuskokwim delta, and in the third year from his arrival the Russian church in the colonies numbered 10,561 communicants, of whom 8,532 were natives. All the churches and chapels were erected at the expense of the company. The schools at that time numbered but three, located at Sitka, Kadiak, and Oonalashka.

After a prosperous administration, during which much valuable information concerning the Russian possessions had been obtained by means of numerous exploring expeditions, Chistiakof was relieved, in 1831, by Baron Wrangell. This was the time when the Hudson Bay Company was most active in extending its operations on the Pacific coast, and the two vast monopolies were watching each other with suspicion. The English company made several proposals for mutual agreements looking toward uniformity in the management of their intercourse with Indians, but Wrangell had his instructions to crush the dangerous opposition if possible without proceeding to open rupture. His sloops and schooners patrolled the channels of the Alexander archipelago, with orders to seize all boats belonging to the English. The Hudson Bay Company had stations on the upper course of the Stakhin river, which they were anxious to supply by water, sending ships into the mouth of the river, which was situated in the Russian territory. Wishing to prevent this Wrangell sent Lieutenant Zarenbo in the brig Chiebagof to the mouth of the Stakhin river with orders to establish a station. This he did, constructing the Réduite Saint Dionys on the spot where the present Indian village of Wrangell is located. Several boats of the Hudson Bay Company attempting to enter the river were fired upon and turned back. At last the British traders concluded to make the attempt on a larger scale, and fitted out a bark, the Dryad, commanded by Captain Ogden, with orders to establish a large fort at the head of tide-water on the Stakhin river; but Captain Ogden, finding it impracticable to ascend, returned to Vancouver island and reported his failure. The matter was duly represented to the directors of the Hudson Bay Company in London, who presented a claim for damages against the Russian-American Company, amounting to £21,500, the alleged expenditure incurred by the company in fitting out the Dryad. At this time Baron Wrangell's term of office was about to expire, and he concluded to attend personally to the settlement of this complication. Proceeding to San Francisco in one of the company's vessels, and thence overland through California and Mexico to the capital of that young republic, he endeavored to settle with the authorities a dispute concerning the Russian title to the Ross colony on Bodega bay. Without concluding this business, he hurried on to Hamburg, where he met two commissioners of the Hudson Bay Company, including Sir George Simpson, and an amicable arrangement was quickly agreed upon. The terms of this agreement were as follows:

1. The Hudson Bay Company abandoned all claim to the sum of £21,500, the damages for the detention of the vessel.

2. The piece of coast in the Russian possessions from Lynn canal to the southern boundary was leased to the Hudson Bay Company at an annual rental for a period of ten years dating from the 1st of June, 1840, the Hudson Bay Company to have the exclusive right of trade in the leased territory for the time mentioned, under condition of final surrender of all the buildings and fortifications erected on the lands thus leased.

3. The Hudson Bay Company was obliged to confine its operations to the mainland and not to trade on any island or other portion of the Russian domain.

4. The payment of rental was to be made annually in land-otters, to the number of 2,000 skins, representing at the prices of that time 118,000 rubles.

5. In addition to this payment the Hudson Bay Company bound itself to sell annually to the Russian-American Company 2,000 additional sea-otter skins from the Columbia river, at 23 shillings each, and 3,000 land-otter skins from Hudson bay, at 32 shillings each.

6. The Hudson Bay Company bound itself to furnish the Russian-American colony with a certain quantity of provisions, carrying the same on their own vessels at a fixed rate of freight.

7. In case of war the agreement was to be annulled after a notice of three months.

This agreement was approved by both the Russian and the English governments, and the land in question was surrendered to the Hudson Bay Company. The arrangement was advantageous to the Russian-American Company, who theretofore had maintained their establishment on the Stikine river at a loss, being unable to compete with the rival company in the interior.

In 1836, after Baron Wrangell's departure, Captain Kuprianoff assumed the duties of chief manager of the colonies, and turned his attention chiefly to an extension of the company's business in the northern part of the colonial domains, where, under his predecessor's rule, Lieutenant Tebenkof had in 1835 established the Réduite Saint Michael on Norton sound. He fitted out the brig Polyphe, under command of Captain Kashevarov, for an Arctic exploration, and sailed in July, 1838, succeeding in reaching point Barrow, not with his ship, but by means of bidars, coasting from Kotzebue sound eastward. Kuprianoff made several voyages to San Francisco, attending personally to the still unsettled question in regard to the company's California colony, and inaugurating proceedings leading to its final sale a few years later. Toward the end of his administration the missionary Veniaminoff was called to Irkutsk and consecrated as bishop of the independent diocese of Russian America, which up to that time had been attached to the episcopal see of Irkutsk, this change involving the erection of a cathedral at Sitka and the subsequent residence of Veniaminoff (who on his consecration had assumed the name of Innocentius) at that place. In his new field of labor he devoted himself to the conversion of the savage Kolosh, and, mastering their language, translated several books of the New Testament and some hymns and a catechism. His success in the work of conversion was, however, only temporary, being confined altogether to the time of his presence among them. A seminary for the training of native and creole youths to the priesthood was also established by him, and maintained until the bishop's see was finally transferred to Kamchatka.

While the northern sea-coast was being surveyed by scientific navigators, such as Lieutenants Tebenkof and Rosenberg, the interior of the country was not neglected. Glaznov and Malakhov penetrated into the recesses of the Yukon and the Kuskokwim valleys; the former ascending the Yukon (then called the Kvichak) as far as Nulato, and was the first to make the portage between the Yukon and the Kuskokwim in 1836; while the latter proceeded from the redoute on the Nushagak river to the Kuskokwim, and thence to Nulato, establishing a station which was subsequently destroyed by the savage natives.

The fortification of Saint Michael, established by Tebenkof, was seriously threatened by the natives of Kotzebue sound in the year 1836. The redoute was surrounded by a large force during the absence of a small detachment consisting of nine men, with the trader Kuprianoff; but the latter, observing the movements of the savages, fought his way through their lines with great bravery and rejoined the garrison, and together they succeeded in repelling all attacks.

One of the most remarkable events that occurred under Kuprianoff's administration of the Russian possessions was the appearance of a small-pox epidemic extending from 1836 to 1840, inclusive. The disease first made its appearance in Sitka, November, 1836, and though at that time the company had a resident physician, Dr. Blaschke, at that place, all efforts to stay its ravages were in vain. Old and middle-aged people suffered most, attacks in their cases proving nearly always fatal; but among children the mortality was less. The elders, owing perhaps to their more cleanly mode of life, suffered in a minor degree, but the Kolosh, living in filth and misery, were swept away by whole families, and inside of three months 400 deaths occurred in the native village of Sitka alone. Only one Russian was attacked during that time, and he recovered. In March, 1837, the disease began to die out. Among the inhabitants of the native settlements on the interior channels of the Alexander archipelago the mortality was also very great. As soon as navigation opened a stationed surgeon, Valsky, with three experienced assistants was dispatched to the district of Kadiak with orders to vaccinate the people; but the precaution came too late, the disease having been evidently carried to Kadiak on the same ship which brought the medical assistants. On the island of Kadiak 736 persons died. On the peninsula of Alaska one of the assistant surgeons vaccinated 243 persons, and in that vicinity only 27 succumbed to the disease.

Dr. Blaschke was dispatched to Oonalashka, where he vaccinated 1,086 natives, and here only 130 died. In the vicinity of the trading-posts on Cook's inlet, Prince William sound, and Bristol bay the natives refused to submit to vaccination, the consequence being that 550 persons were attacked by the disease, of whom over 200 died. The last cases of small-pox in any portion of the Russian colonies were reported in 1840.

About the end of Baron Wrangell's administration it had become evident that the expenses of the Russian-American Company in maintaining their colonies in northwestern America were increasing to an alarming degree,

while the income derived from the fur-trade remained stationary, or even decreased in many of its branches. The officers of the company stationed in the colonies reported that one reason for this state of affairs could be found in the fact that hundreds of feeble and superannuated employés were drawing salaries and subsistence without rendering adequate service. These individuals had grown old and lost their health in the employ of the company, and could not well be discharged and thrown upon their own resources; and in order to relieve the company from this burden, to a certain extent, the directors petitioned the government for permission to pension off the useless employés, or to settle them in the most favorable localities as fishermen and tillers of the soil. The proposition was favorably considered by the government, and a ukase was issued on the 2d of April, 1835, empowering the Russian-American Company to locate as permanent settlers such of their employés as had married native or creole women in the colonies, and who, on account of disease or old age, were no longer able to serve the company. Such settlements were to be made only upon written request of the superannuated servants, and the company was obliged to select a piece of ground, build comfortable dwellings, furnish agricultural implements, seed, cattle, and fowls, beside providing the settlers with provisions for one year. These individuals thus located were exempt from taxation and military duty, and a list of their names was to be forwarded annually with the company's report. The children of these settlers could be taken into the company's service upon their own request, at established rates of salary. The company was obliged to purchase all surplus produce of the settlers, and also such furs as they might be able to obtain. The ukase also permitted creoles to enjoy the same privileges after concluding their term of service with the company. The Russian settlers of this class were to be known officially as colonial citizens and the creoles as colonial settlers. As localities best adapted to this purpose the chief manager selected the coast of Cook's inlet, the island of Afognak, and Spruce island.

In 1840 Captain Etholin was appointed chief manager of the colonies, and found himself face to face with serious difficulties in the management of the native population. The small-pox epidemic had carried off a large percentage of the providers of the native families, and, as a consequence, whole families and communities were brought to the verge of starvation. On Kadiak and nearly all of the Aleutian islands it had been the custom of the people to live in small settlements of one or two families each, widely scattered along the coast, and even these small communities wandered frequently from place to place in search of better hunting- and fishing-grounds. In their isolated condition a large number of these small families or village communities found themselves at the end of the small-pox epidemic in a condition of extreme want, and out of reach of assistance from their neighbors. On Kadiak island alone sixty-five village-sites, occupied by a few individuals each, were enumerated. Captain Etholin, acting upon the suggestion of his predecessor, concluded to consolidate the scattered settlements, each hamlet being unable to provide for its own existence, and to establish large villages, each under the management of a competent chief. The chiefs were to be held responsible for the collection of food-supplies at the proper season, and were intrusted with the maintenance of storehouses in which each community deposited surplus provisions in times of plenty, to be issued again in times of want. This measure was energetically carried out, not only at Kadiak, but on the Shumagin and the Aleutian islands, and its effect was very beneficial.

The second term of the Russian-American Company's special privileges expired in 1841, and the directors and shareholders labored assiduously for a new grant of charter for another twenty years. The imperial government took some time to consider the question, but in 1844 a new charter was granted. This document increased the rights and advantages enjoyed by the company, confirmed the establishment of the two classes of colonial citizens and colonial settlers, and enlarged the colonial government by the establishment of a council to consist of the assistant chief manager and two or three naval officers stationed in the colonies, which council was invested with advisory functions only in the management of colonial affairs, but acted in certain emergencies as a court of arbitration between the inhabitants of the colonies and the company's authority.

An extensive exploration of the Yukon and Kuskokwim regions was made under the direction of Etholin. In the month of May, 1842, the brig Okhotsk proceeded to Saint Michael with Lieutenant Zagorskin, of the navy, and five assistants. After fitting out his expedition with provisions, dogs, and canoes Zagorskin made several journeys along the coast of Norton sound, and finally crossed over the hills of the coast range into the valley of the Yukon. On the 15th of January, 1843, the expedition reached Nulato, and from here Zagorskin undertook a journey to Kotzebue sound, but, owing to the desertion of his assistant, failed to accomplish his object and was obliged to return to Nulato. The following spring he constructed a large bidar of six oars, and set out in June upon the journey to the upper river. After advancing more than a hundred miles from Nulato the hostile attitude of the natives obliged him to return to the latter place, whence he made his way to Ikogmute, crossing over the tundras to the Kuskokwim. In the beginning of February, 1844, he established himself at the Rédone Kalmakovsky, making a thorough exploration of the surrounding country, finally returning to Saint Michael and thence to Sitka.

Zagorskin subsequently published a voluminous journal of his travels in the basins of the Yukon and Kuskokwim.

At the beginning of his administration Captain Etholin concluded arrangements for the sale of the Ross colony on the coast of California. The imperial permission for this transfer had been obtained some years previously by the directors of the company, who had become convinced that the enterprise had not resulted in

any pecuniary advantage. During the occupation of the settlement ten vessels (brigs and schooners) had been constructed of timber sent in the immediate vicinity. The records show that not one of these vessels proved seaworthy for more than six years after construction; but whether this was due to the incapacity of the builders or to the fact that the timber had not been seasoned, it is impossible to decide. There was no lack of skilled mechanics in the settlement, as we have evidence of much work performed by the Russians for their unskilled neighbors in San Francisco bay, where sailing- and row-boats were built for the Mexican authorities and private individuals, and even one buggy for the use of a missionary; but having failed in its principal object of creating a never-failing supply of breadstuffs for the northern stations, the company finally sold the land, with all buildings and live stock, to a native of Switzerland, named Sutter.

Etholin also displayed great energy in establishing new schools and enlarging those already in operation in the various districts of the colonies. Under the active superintendence of his wife a home was founded in Sitka, in which the creole girls were educated, instructed in household duties and female handicraft, and finally provided with a small dowry and married to officers and employés of the company.

The clause in the company's charter requiring that the chief manager should be selected from officers of the navy had an unfortunate effect upon business. After Baranof's departure not a single practical merchant or business man had the management of colonial affairs, and the consequence was that the dividends diminished every year, while at the same time, according to the official reports to the directors and to the imperial government, the colonies seemed to be flourishing and developing rapidly. Each succeeding chief manager seemed to think only of making the greatest display of continued explorations, erection of buildings, construction of ships of all sizes, and the establishment of industries and manufactories. The ship-yard at Sitka was as complete as any similar establishment in the Russian empire, being provided with all kinds of workshops and magazines, even having brass- and iron-foundries, machine-shops, and nautical-instrument makers. Experiments were made in the manufacture of bricks, wooden ware, and even woolen stuffs of material imported from California. For all these enterprises the skilled labor had to be imported from Russia at great expense, and this circumstance alone will explain the failure attending the attempts. Vast sums were also wasted in endeavors to extract the iron from a very inferior grade of ore found in various sections of the country. The only real advantage the company ever reaped from its many workshops at Sitka was the manufacture of agricultural implements for the ignorant and indolent rancheros of California, thousands of plowshares of the very primitive pattern in use in those countries being made at Sitka for the California and Mexican markets. Axes, hatchets, spades, and hoes were also turned out by the industrious workmen of the Sitka ship-yard, while the foundry was for some time engaged in casting bells for the Catholic missions on the Pacific coast. Many of these bells are still in existence and bear witness to the early, though perhaps abnormal, industrial development on our northern coast.

Etholin was in 1845 relieved by Captain, subsequently Admiral, Tebenkov; to whom we owe the best atlas of the coast of Alaska ever published. The hydrographic notes were very copious and correct, and nearly all subsequent charts and maps have been based upon his surveys. He brought the colonial fleet into a high state of effectiveness, but of the fur-trade he knew no more than his immediate predecessors, and, as a consequence, the shares of the company continued to decline in value. Toward the end of his administration the discovery of gold in California occasioned a sudden revival of business, as for a brief time the Russian possessions in North America were the nearest depot of supplies. A few cargoes of shop-worn, unsalable goods that had blocked up the warehouses of the company for decades were disposed of at San Francisco at immense profit, and a lucrative trade was inaugurated in salt fish and lumber. An attempt was also made by the company to engage in mining in California on its own account, an official with a force of Aleutian laborers being sent to the mines, where he took up a claim, but after obtaining a few ounces of the precious metal his Aleutians left him to take up claims of their own. Finding themselves baffled in this enterprise the directors of the company dispatched an experienced mining engineer, a graduate of the college of mines in St. Petersburg, to Sitka, with orders to prospect for precious minerals in the colonies. This man, Lieutenant Doroshin, began his explorations in 1849. He discovered gold in the vicinity of Cook's inlet and collected several ounces in dust, but this was the result of the labor of forty men for nearly a year at great expense; and upon the recommendation of Doroshin these experiments were abandoned.

The existence of coal in the southern portion of the Kenai peninsula had been known for many years, and occasionally a small quantity of the mineral had been extracted for use in the Sitka ship-yard and on the tug-boats and small steamers of the company. The discovery of gold in California, however, gave a new impetus to this industry. Experienced miners and engineers were imported from Russia and Germany, and a large force of men was employed in opening the coal-veins at English bay, or Graham's harbor.

The prosecution of this enterprise required a large amount of capital, which the shareholders of the Russian-American Company were unwilling or unable to furnish, but by this time the development of California had created a demand for coal, and it was not difficult to find men willing to engage in such a venture at San Francisco. A company was formed, consisting of several American merchants of San Francisco and the Russian-American Company, represented by their resident agent in San Francisco, Mr. Kostrometinov. Arrangements were made for the shipment of machinery, pump and hoisting-works, from the eastern states, the Russian-American Company furnishing the necessary capital for preliminary expenses. The San Francisco partners of the new firm, which was

subsequently named the American-Russian Company, suggested that shipments of ice from Alaska to San Francisco be included in the operations of the firm, and the Russian company began the construction of ice-houses and wharves at Sitka, and subsequently on Wood island, near Kadiak.

In the spring of 1851 Lieutenant Barnard, a member of Captain Collinson's Franklin Search expedition, proceeded to Nulato in search of information with regard to the fate of Sir John Franklin, and having traced certain rumors of the presence of white men in the far interior to the Koynuk tribe, he expressed his determination to send for the principal chief of that tribe, who was then participating in the celebration of an annual festival about twenty-five miles from Nulato. The chief in question was the most wealthy and influential in the whole region, and, being possessed of an exaggerated opinion of his own importance, took offense at the English officer's expression. The Russian traders who had lived for years at the isolated station of Nulato, and were mere at the mercy of the surrounding warlike tribes, had always respectfully invited him to the fort whenever they desired his presence. His Indian pride rose at the insult, and a council of warriors was called; the shamans were also consulted, and it was finally concluded that all the Indians assembled should proceed to Nulato and demand satisfaction for the alleged insult. At this time a Russian employé of the company, accompanied by one man, arrived on the spot, having been instructed to induce the chief to meet Lieutenant Barnard at Nulato. As soon as his errand was known the man was doomed, and he was approached from behind while seated on his sled and instantly killed with a lance. The Indian companion of the murdered trader was also killed. Immediately after committing this crime the warriors prepared for action and set out for Nulato. Only half a mile from the trading-post was situated the native village of that name, containing about one hundred people. The Indian slain by the Koynuks belonged to this village, and, in order to forestall retaliation, the invaders surprised the inmates in their houses, killing all with the exception of a few women and children. This was done so quietly that the Russians and their visitor at the station were not aroused. When the blood-thirsty savages finally reached the stockade they found the commander, Derabin, who had just arisen, sitting behind one of the houses. He was approached stealthily from behind and stabbed in the back, dying immediately, without giving the alarm, and over his body the party entered the house where Lieutenant Barnard was reading. At the sight of the infuriated Indians the English officer seized a gun and fired twice without hitting any one, and a notorious shaman, named Larion by the Russians, then stabbed the lieutenant in the abdomen, inflicting a mortal wound. The Indians next turned their attention to the barracks, where the laborers lived with their native wives, but a few shots fired by the besieged induced them to retreat with the prisoners made in the village. The murderous shaman had been wounded in the melee, but managed to make his escape, and lived until a few years ago, both feared and hated by whites and Indians, committing many horrible crimes and frequently inciting others to murder. Lieutenant Barnard was buried within a few yards of the stockade of Nulato, and a cross was erected over his grave by Surgeon Adams, royal navy, with the inscription: "Lieutenant J. J. Barnard, of Her Majesty's Enterprise, killed February 16, 1851, by the Koynuk Indians.—F. A." The cross has since been painted at various times by traders stationed at Nulato, and the inscription has disappeared. When I visited the spot in the summer of 1880 the simple monument was still standing, with a new coat of sky-blue paint, and to the right and left were two other graves of victims of murderous Indians in the vicinity.

In 1851 Tebenkof was relieved by Captain Rosenberg as chief manager of the colony. The latter continued to carry out the terms of the company's agreement with its San Francisco partners in the coal and ice business, but a suspension of all traffic was threatened by the outbreak of the Crimean war, involving the danger of an attack upon the Russian colonies by English cruisers. As soon as war was declared the representatives of the Russian-American Company and the Hudson Bay Company met in London and drew up a mutual agreement of neutrality as long as the war should last; no armed vessel and no land force larger than was needed for the purpose of local protection was to be maintained in either colony, and intercolonial traffic was to be carried on as usual, with one exception, this concerning the piece of land rented by the Hudson Bay Company from its Russian neighbors. The rental for this was commuted from 2,000 land-otter skins to a fixed sum of 1,500 pounds sterling per annum. The Hudson Bay Company was also temporarily released from its obligation to ship provisions to Sitka on its vessels.

The Russian possessions on the northwest coast of America remained undisturbed throughout the war, though a few ships of the company were captured by English cruisers; one of them, the Sitka, falling into the enemy's hands at the end of a successful voyage around the globe, having escaped the notice of all the English squadrons then scouring the oceans, until in the vicinity of the Kamchatka coast she was hailed by a frigate and obliged to surrender. On the Asiatic coast several encounters took place between the Russians and the allied fleet, among them the famous unsuccessful attack of the joint French and English squadrons upon the harbor of Petropavlovsk.

Rosenberg, whose transactions as chief manager were confined within very narrow limits by the war, was relieved in 1854 by Captain Voievodsky, under whose administration the lease of the territory to the Hudson Bay Company was again extended for ten years, upon terms similar to those of the first agreement. In the year 1855 the Kolosh Indians located in the immediate vicinity of Sitka gave evidence of an unruly spirit, and toward the end of the year two savages, who were prevented from stealing wood by a sentry, wounded him with a spear. The chief manager demanded a surrender of the guilty parties, but this demand was met with threats. A few shots were fired from a cannon over the village, but the only effect was a swarming of armed warriors from all the huts and hovels,

who rushed upon the fortified inclosure of the settlement and began to cut down the palisade with axes. Fire was then opened upon the savages by all the batteries and block-houses, and was rapidly returned by the savages. The latter obtained possession of a chapel built of stout logs for the accommodation of the natives and converted it into a stronghold from which they could command with rifles nearly all the Russian batteries. During the first day they did considerable execution in picking off officers and men as they hurried to their stations; but on the following day a regular bombardment of the native village took place, and after two hours the Indians ceased firing, declaring themselves willing to treat. The most profuse professions of friendship for the Russians were made by the savages and good behavior promised for all future time, and after the assailants of the sentry had been surrendered for punishment Voievodsky agreed to pardon the attack. During the action 2 Russians were killed and 19 wounded, the Kolosh losing 60 in killed and wounded. A report of the transaction to the imperial government resulted in an expression of thanks by the emperor to Captain Voievodsky.

Lieutenant Baranof, of the Siberian line battalion stationed at Sitka, who had been wounded, received the order of Saint Anne of the fourth class; and one gold and four silver medals, with the inscription "for bravery", were bestowed upon soldiers who had distinguished themselves on the occasion.

The American whalers frequenting Bering sea previous to entering the Arctic through Bering strait had frequently been the object of complaint to the Russian government by the Russian-American Company. It was claimed that these whalers made a practice of landing on the Aleutian islands to try out blubber, and that the offensive smoke and stench resulting from this operation had the effect of driving away the precious sea-otter from the coast. In 1842 Chief Manager Etholin reported that in his tour of inspection throughout the colonies he had encountered several American whalers close inland, but that they refused to answer his questions or to obey his orders to leave the Russian waters. Some of the whalers learned that in 1841 fifty ships from New Bedford and Boston had been in the vicinity, and that they had succeeded in capturing from ten to fifteen whales each. From 1842 these complaints concerning the whalers were renewed every year, and during Tebenkov's administration he proposed to the company to go into the whaling business in the waters of Bering sea and the north Pacific as the best means of keeping out foreigners. His plan was to hunt whales in boats only from the harbors of the Aleutian islands, and to engage at first a number of American harpooners and steersmen until they and the Aleutians had been sufficiently trained to do the work.

Under the terms of the treaty with England and America no vessel of either of those two nations was allowed to hunt or fish within 3 marine leagues of the shore; but as there was no armed government craft in the colonies the provisions of the treaty were totally disregarded by the whalers, until at last the company proposed to the imperial government that if a cruiser were sent out from Russia to guard the colonial coast against intruders the company would bear the expenses of such a vessel. The emperor agreed to the proposal, and gave orders to the naval authorities to prepare estimates as to cost and expenditure. In reply a report was received stating that the sum of 270,000 rubles was required to fit out the ship for the cruise, and 85,000 rubles annually for its maintenance. This sum the company found itself unable to pay and the project fell through. At last, in 1850, the corvette Olivitz was ordered to the sea of Okhotsk, and did some service in keeping foreign whalers out of that sea and breaking up their principal station near the Shanta islands. In the meantime Tebenkov's suggestions concerning the fostering of Russian whaling interests in the Pacific had borne some fruit; a few of the shareholders of the Russian-American Company, together with some ship-owners in Finland, concluding to fit out whaling ships in Finland or at Cronstadt, and send them around into the waters of Bering sea and the Arctic beyond the straits.

A capital of 100,000 rubles was quickly contributed, and active operations began as early as 1849. By order of the emperor a sum of 20,000 rubles was appropriated from the special fund of the province of Finland to aid in the construction of the first whaling ship, and a sum of 10,000 rubles to be paid the company for the construction of each succeeding ship of the same class. The company also obtained the privilege of importing free of duty all the material necessary for building and fitting out the first twelve ships, and to carry on the business without payment of duties for a period of 12 years. The name of this branch company was "The Russian-Finland Whaling Company", and its charter was approved on the 13th of December, 1850.

The first ship, the Suomi, of 500 tons, was burned in the port of Åbo, Finland, in the year 1851. The command of the vessel was intrusted to a German captain, Hagshagen; and a crew of thirty-six men was engaged, which consisted principally of foreigners, among them three steersmen, three harpooners, and three coopers. The whale-boats had been imported from New Bedford. The cruise of the Suomi in the Okhotsk sea in the year 1852-53 was very successful, the catch being 1,500 barrels of oil and 21,400 pounds of whalebone; the cargo was sold on the Sandwich islands, realizing 88,000 rubles, a sum that covered the price of constructing the vessel and fitting it out, and left a clear profit of 13,000 rubles. Unfortunately the war with England and France broke out about that time and interfered with further operations in this line.

The Suomi had sailed for home before the news of the war reached the Sandwich islands, and consequently knew nothing of the circumstances when she made the first port on the English coast. The pilot came off and, strange to say, warned the captain of his danger and gave him an opportunity to make his escape to Bremen. The presence of French and English cruisers in the channel made it necessary to sell the ship at Bremen for the comparatively small sum of 21,000 rubles.

The second whale-ship dispatched by the new company was the *Turko*, which left for the Okhotsk sea in 1852, having been fitted out altogether at Åbo. The captain was a German by the name of Schäle, and the crew consisted of twenty-five Finlanders, many of whom had served on American whaling-voyages. A cargo of goods for the Russian-American Company was also forwarded on this ship; but by various disasters the vessel was delayed and did not arrive at Sitka until late in 1853. Shortly before reaching port a few whales were killed, 150 barrels of oil and 650 pounds of whalebone being secured.

Early in the following spring the ship proceeded to sea under command of the first mate, Sederblom, the captain being disabled by disease. The voyage was very successful, resulting in a catch of 1,700 barrels of oil and 23,000 pounds of whalebone.

During the siege by the Anglo-French fleet the *Turko* was in the harbor of Petropavlovsk, but succeeded in making her escape, discharging her valuable cargo at Kadiak for safe-keeping, and finally reached Sitka, where she remained safely until the end of the war.

The third whale-ship dispatched to the north Pacific from Finland was the *Aian*, 540 tons. She was commanded by a Finnlander, Captain Enderg, and reached the sea of Okhotsk in 1854. The catch during the first year was not great, and in the spring of 1855 the naval commander of Kamchatka ordered the captain to land his cargo and to transport the families of officers and soldiers from Petropavlovsk to the Amoor, and during this voyage the ship was captured by an English frigate and burned. At the end of the war the whaling company discovered that, though no actual loss had been incurred, the profits of the business were not what they had expected, and the subsequent operations do not seem to have been pushed with energy or vigor.

A few more ships were fitted out, but as soon as they returned with their cargoes of oil and bone they were sold for whatever price they would bring. It was perhaps unfortunate for the interests of the Russian whaling industry in the north Pacific that the company engaged in the business was so closely connected with the Russian-American Company, which was then becoming more deeply embarrassed every year.

Under Captain Voievodsky's administration the affairs of the Russian-American colonies were managed very much in the same way as under his predecessors—with the same extravagant display of colonial government and useless experiments in mining, agriculture, and ship-building which characterized the five years immediately preceding the expiration of the third term of the company's privileges. The corporation was deeply in debt, and, though desirous of continuing the business, endeavored to transfer to the government the expense of maintaining its authority in the colonies. The imperial cabinet was both unwilling and unable to accede to the proposition, as the country had just emerged from a disastrous and expensive war, and thus the grant of another charter was postponed from year to year. In the meantime several government officers were intrusted with a thorough inspection of the condition of the colonies and the company's affairs. Private Councilor Kostlivtzof and Captain Golovin compiled voluminous reports on the subject, and committees of the imperial senate and ministerium of commerce deliberated upon the vexed questions for years. Their reports were very conflicting, and it seemed next to impossible to reconcile the interests of both the government and the company by any arrangement the various committees could devise.

Voievodsky had been relieved in 1859 by Captain Furnhelm, but the company refused to select a successor to the latter until the new charter should be granted. In the meantime the first negotiations for a sale of the Russian possessions on the American coast were inaugurated privately in the year 1864. It is said that the first offer was made to England, although the American government was approached on the subject early in 1864; but the matter was temporarily dropped on account of the civil war then raging.

With the establishment of peace in the United States the subject was taken up again by the Russian ambassador and Secretary Seward. San Francisco merchants, among them the members of the American-Russian (so-called) Ice Company, were among the most active promoters of this scheme, the latter firm expecting to succeed the Russian-American Company in their fur-trade and other branches of business. Upon the refusal of the company to appoint a new chief manager the emperor of Russia had sent out Prince Maksutof, a naval officer of Tartar extraction, who administered the colonies under the title of military governor. He was, however, subsequently invested by the American-Russian Company with the powers of a plenipotentiary agent, and finally assumed the whole management of its affairs in winding up the general business and transferring its property.

In 1865 the managers of the Western Union Telegraph Company conceived a plan for constructing a line of telegraph to connect the new world and the old by means of a cable via Bering strait. The project was first directed by Mr. P. McD. Collins, who obtained the necessary charters from the British and Russian governments. Colonel Bulkley, of the United States army, was appointed chief engineer of the enterprise, and, after making arrangements for work in British Columbia, went to Sitka in the United States steamer *Shubrick*, which had been placed at the service of the Western Union Company by the government. Here Colonel Bulkley found his advent quite unexpected, but the governor, Prince Maksutof, expressed readiness to afford every assistance in his power, giving the assurance that the natives would be friendly to the enterprise if properly approached. Some of the Thlinket chiefs were then at Sitka, but Maksutof thought it best to defer negotiations, probably because he had no instructions from his government. During the same year, in the month of July, an exploring party of the telegraph company, commanded by Robert Kennicott, was landed at Saint Michael, Norton sound, by the bark

Golden Gate, belonging to the Western Union Telegraph Company. The party was provided with a small stern-wheel steamer, the Wilder. Mr. Kennieott had previously explored the headwaters of the Yukon in connection with a journey through British North America, but the other members of the expedition were new to the country, though they have since become most intimately connected with scientific and mercantile enterprises in the territory. Among them may be mentioned Mr. Ketcham, Mr. Whimper (artist), Mr. William H. Dall, Mr. F. M. Smith, and Mr. Francis, the engineer of the little steamer. Preparatory arrangements for the work of constructing a telegraph line began at once, with the assistance of Stephanof, who was then the Russian commander at Saint Michael.

During the winter a portion of the telegraph party proceeded up the Yukon river and located at Nulato. The winter was passed in active explorations, but the approach of spring was marked by a sad calamity: the talented and energetic director of the Western Union scientific corps, Robert Kennieott, was found dead on the bank of the river on the 13th of May, 1866. On the day before he had saved the life of a Russian whose canoe had been caught between cakes of ice. In the morning he was missing at breakfast, and his friends, becoming alarmed, searched and found him lying dead about half a mile from the fort, an open compass lying near him, and figures in the sand showed that he was making a calculation at the moment of his death. He had been suffering from heart disease, aggravated by exposure and anxiety.

Mr. William H. Dall was subsequently appointed Kennieott's successor, and the explorations were continued by him alone. The completion of the transatlantic cable put an end to the enterprise as far as the Western Union Company was concerned, and all its various detachments already in the field in the wilds of Alaska and Siberia were recalled at once.

In the same year (1866) the legislature of Washington territory forwarded a petition to Washington requesting the United States government to obtain from the emperor of Russia such rights and privileges as would enable American fishing-vessels to visit the ports and harbors of the Russian possessions. As negotiations for the purchase of the territory were already in progress no further notice was taken of this special request.

Early in 1867 a surveying party, under command of Professor George Davidson, United States coast survey, was dispatched from San Francisco by the United States steamer Lincoln, arriving at Sitka August 11 and returning late in November.

After long debates in Congress, both in the Senate and House of Representatives, still fresh in our memory, the treaty with Russia for the cession of the present territory of Alaska to the United States was finally passed and the necessary appropriation of \$7,200,000 made. The opposition to the measure was strong and fierce, and its success was almost wholly due to the efforts of Secretary Seward and Senator Sumner.

In the month of May, 1867, the treaty was signed, and on the 18th of October of the same year the ceremony of final transfer of the territory took place at Sitka. Both American and Russian troops were drawn up in line, General Rousseau acting as commissioner for the United States, Prince Maksutof occupying the same position for the Russian government. With the roll of drums and the discharge of musketry the imperial eagle of Russia descended and the stars and stripes rose into the murky atmosphere of an Alaskan autumn day. The Princess Maksutof wept at the spectacle, and all nature seemed to keep her company, drenching to the skin all the participants in the ceremony. The native Indians in their canoes witnessed it from a distance, listening stolidly to the booming of cannon and gazing with indifference upon the descending and ascending flags. Of the nature of the proceedings they had a faint and imperfect conception, but one thing they did realize—that the country they once imagined their own was now being transferred to a strange people by what must have appeared to them a singular ceremony.

The new acquisition was looked upon as an "Indian country", and a military commander was placed in charge, General Jefferson C. Davis being appointed commander of the new department, with headquarters at Sitka. The garrison consisted of one company of artillery and one company of infantry, numbering together perhaps 250 men.

A number of business men had accompanied or preceded the commissioners of the two governments, and the American flag was scarcely floating from the top of the flag-staff before new shops were opened, vacant lots covered with the frame-work of shanties, and negotiations entered into for the purchase of houses, furs, and other property of the old Russian company, and in less than a week new stores had been erected, and two ten-pin alleys, two drinking saloons, and a restaurant were opened.

Sitka, the town that for two-thirds of a century had known nothing beyond the dull, unchanging routine of labor, and a scanty supply of necessities at prices fixed by a corporate body 8,000 or 10,000 miles away, was profoundly startled even by this small ripple of innovation. To the new American domain flocked a herd of men of all sorts and conditions, Alaskan pioneers and squatters, and aspirants for political honors and emoluments in the new territory. Before the first sunset gun was fired pre-emption stakes dotted the ground, and the air was full of rumors of framing a "city charter", creating laws and remunerative offices; and it was not long before an election was held for town officers, at which over 100 votes were polled for nearly as many candidates. The Russian population looked with wonder upon this new activity. The families of the higher officials, as well as those of the farmer and laboring classes, opened their houses to the new-comers with true Russian hospitality; but unfortunately they did not discriminate, treating officers, merchants, and soldiers alike, and in many instances their kindness was

shamefully abused. Robberies and assaults were the order of the day, or rather of the night, until the peaceable inhabitants were compelled to lock their doors at nightfall, not daring to move about until the bugles sounded in the morning.

A number of representatives of wealthy firms and corporations had started upon a race from San Francisco or the Sandwich islands to secure the property and good-will of the Russian-American Company. Mr. H. M. Hutchinson, representative of the firm of Hutchinson, Kohl & Co., was the successful competitor, he having completed his bargain with Prince Maksutov even before the agent of the Americau-Russian or Ice Company, the previous partners of the Russians, had been able to present his claims.

The Russian-American Company was allowed two years in which to settle its affairs and to transport all the Russian subjects who wished to return. For this purpose all its employés distributed through the territory were collected at Sitka, and from the time of the transfer to 1869 nearly 1,000 of them were living there; and to these between \$40,000 and \$50,000 were paid every month as salaries, which, being regularly spent before the next payday, made business decidedly brisk. In addition to these Russians there were two companies of soldiers and a few hundred Americau and other traders, while a man-of-war and a revenue-cutter were always in the harbor, yielding a golden harvest to business men and saloon-keepers. At this time high hopes of Alaska's future prosperity were entertained. The Western Union Telegraph enterprise, before its abandonment, had pushed its wires to British Columbia, to fort Stager, on the Skeena river, in latitude $53^{\circ} 30'$. This brought the telegraph within 350 miles of Sitka, but at present the nearest telegraph office is at Victoria, Vancouver's island, 900 miles away.

Difficulties with the Indians in southeastern Alaska began at an early day under the new government. The last acts of hostility committed by the Kolosh of that vicinity had occurred in 1864, when an English vessel called the Royal Charlie was boarded by the Kekh Indians and the entire crew slaughtered. The Russian authorities took no notice of the affair whatever, because the English craft had no right to trade in those waters, and the offenders remained unpunished.

In December, 1867, the first trouble occurred at Sitka. A sentry of the garrison observed some Indians after nightfall with a light in the vicinity of the powder-magazine, and, hailing them without receiving an answer, he fired, wounding one of the number. The remainder decamped, but the next day a demand was made by the chief for compensation for the injuries sustained by the wounded man. General Davis refused to comply with the request, whereupon the chief returned to the village and hoisted the English flag. Davis sent a messenger to notify the chief that if the foreign flag was not removed by daylight on the following day he would bombard the village; and when day dawned the rays of the sun illuminated the stars and stripes in place of the cross of Saint George, but the Indians were surly for some time after the occurrence, threatening an outbreak occasionally.

As early as the 1st of March, 1868, a newspaper appeared in San Francisco under the name of the *Alaska Herald*. It was published by a runaway monk of the Greek church, who had never seen Alaska, but who imagined that he was called upon to declare himself a champion of the former Russian possessions. A few columns of this sheet were published in the Russian language, and the most absurd proclamations addressed to the people of Alaska were circulated among its readers, and for some time its publisher succeeded in sowing the seeds of discord and dissatisfaction among the new Russian-speaking citizens of the United States by telling them that as Americans they were all entitled at once to 160 acres of land, and that they must not labor for less compensation than \$5 a day in gold, declaring with the greatest effrontery that the Constitution of the United States so provided.

In the meantime military garrisons were dispatched to other points in the territory and located among peaceable tribes, where even the first discoverers had never found it necessary to make a display of force. A battery of artillery was stationed on the island of Kadiak, and another command from the same regiment sailed from Washington territory in June, 1868, to establish a military post on Cook's inlet. The spot to be selected had not been definitely indicated on the charts, and while attempting to find the proper place a ship was wrecked upon a rock on July 16, at the mouth of what is now called English bay or Graham's harbor; no lives were lost, but nothing else was saved. After suffering much hardship the wrecked soldiers were rescued in the month of August by the steamer Fideliter and taken to Kadiak. For many years following the natives of the vicinity had ample supplies of military clothing, rifles, and other stores cast up by the sea.

The first American vessel that visited the seal islands was owned by the firm of Williams & Haven, of New London. The agent and commander landed on Saint Paul island on the 13th of April, 1868, and on the 2d of September sailed for the Sandwich islands with a rich cargo of seal-skins. Disputes arose between this party and the agent of the successors to the Russian-American Company, and the government found it necessary to station treasury agents on the island to preserve order and prevent, if possible, an indiscriminate slaughter of seals.

In February, 1868, the first detachment of Russians homeward bound left Sitka, numbering 200, on the ship *Tsaritsa*.

The Indians of the upper Yukon river and in the vicinity of Nulato gave indications of hostile spirit at the beginning of the year 1868. The epidemic pneumonia was prevalent among them, and their shamans declared to the people that the disease had been imported and spread by the white men. The Rédoute Nulato had previously been the scene of bloody encounters, as in 1851, when Lieutenant Barnard, royal navy, one of the members of the Franklin Search expedition, was killed, as before described. Several murders occurred among these Indians during

the first year of American possession, but the white traders were not attacked, though frequently threatened. In the meantime the military authorities at Sitka continued to have difficulty in the immediate vicinity. It is the time-honored custom of the Chilkat to demand payment in money or goods for the death or injury of a member of the tribe, and failing to receive the desired equivalent they retaliate with violence.

On the 1st of January, 1869, the chief of the Chilkat tribe was on a visit to Sitka with sixty or seventy of his warriors, and paid his respects to General Davis, who made him a present of a few bottles of whisky. The American commander had adopted from the Russians the rule of allowing no Indian inside of the palisades surrounding the settlement between sunset and sunrise. On that day the visitors began to feel the influence of the whisky, and both the Sitka and the Chilkat chiefs refused to retire, and snatched the gun from the sentry who endeavored to enforce the order. The Sitka chief was immediately arrested, but on attempting to seize the other chief the soldiers were met by an armed body of Indians, and in the mêlée the Sitka chief was knocked down and one of the soldiers was wounded, when both parties retreated. On the following morning the Sitkans came to the fort with a flag of truce, requesting an audience with General Davis, declaring that they desired peace and protection. A messenger was sent to demand the immediate surrender of the Chilkat chief, and, when he refused to come, orders were given to shell the house in which he was staying. The troops were all under arms, guns double shotted, and citizens prepared for defense. The vessels of war in the harbor had orders to prevent the escape of Indians from the village, but during the following forenoon several canoes put off from the beach and were fired into from the Saginaw. One canoe was sunk and three of the inmates killed, one belonging to the Sitka, one to the Chilkat, and one to the Kehk tribe. Obtaining no payment, the Keliks killed two white men, prospectors, who had ventured into their country. At the same time a small schooner, the *Lonisa Downs*, was wrecked in one of the interior channels, and it was reported that the whole crew had been massacred. General Davis placed a company of troops on board of the United States steamer Saginaw and started from Sitka on the 11th of February. The first village was found to be deserted by all the inhabitants with the exception of one squaw, and the houses were laid in ashes and everything of value destroyed. Subsequently two other villages were found alike deserted and were treated in a similar manner. Not a hostile warrior was seen. Some time later it was discovered that the shipwrecked crew had not been killed, but rescued by these savages and treated kindly. The return to Sitka was delayed only through fear of the natives caused by the bloodless campaign narrated above.

In the month of July of the same year the Chilkat Indians, who had still a life to their credit on account of the trouble in Sitka in the month of January, boarded a small trading-vessel and demanded a life or money. A written guarantee for the settlement of the claim was given and the matter reported to the commanding officer at Sitka, who, however, refused to have anything to do with it. Upon this the trader who had given the security paid the claim, thus securing peace to the country, and after this the Indians submitted to the general's demands.

On the 29th of April, 1869, the first number of the *Sitka Times* was published at Sitka, by T. G. Murphy, who combined the avocations of tailor, lawyer, and editor. The little sheet was the organ of an aspirant for gubernatorial honors, through whose efforts the city government was organized in Sitka, with W. S. Dodge as mayor. The new government labored under difficulties, being confronted at every step with military orders threatening arrest and confinement in the guard-house. A truce between the contending powers was observed during the visit of Secretary Seward, in the month of July, 1869, who came to view the purchase so intimately connected with his name. Congratulatory speeches were exchanged between Mr. Seward, the military commander, and the "mayor and the board of aldermen". But the Russian church was robbed of some richly-jeweled paraphernalia of worship, and minor thefts were of common occurrence. Among the officers wordy disputes were frequent, and one duel was fought with fatal result.

General Thomas, who was then in command of the military division of the Pacific, made a tour of inspection throughout the territory, and after careful investigation of the state of affairs deemed it wise to abandon all military posts in Alaska with the exception of that at Sitka.

The year was not to end, however, without additional difficulty with the Indians of southeastern Alaska. An occurrence took place at fort Wrangell which delayed the abandonment of that post for some time. Some white miners passing the winter at that place had sold liquor to the Indians about the fort, and one of the drunken savages beat his squaw until the blood rushed from her mouth. The post-trader, Leon Smith, interfered and had the woman carried into the house of one of the laundresses of the garrison. The brutal husband then feigned regret for the ill treatment of his wife, and offered to shake the hands of the laundress who had protected her. During this friendly ceremony he suddenly seized one of the woman's fingers in his mouth and bit it off, and then fled for the Indian village. A detachment of soldiers was sent to arrest him, but the Indians displayed considerable hostility. The trader Smith then set out for the village, hoping to pacify the savages, but after advancing a few steps he was shot down. After considerable delay, and bombardment of the Indian village from the garrison, the murderer was delivered, tried by court-martial, and hanged, the chief of the tribe acquiescing in the sentence.

In the spring of 1870 another murder was committed at Sitka by a soldier who had been dishonorably discharged. This man, William Bird, had a grudge against the commander of his company, and meeting him in a saloon he drew his pistol, threatening to kill him. The officer struck at Bird and pushed him out of the door; the man then fired through the door, instantly killing a lieutenant of the revenue service who happened to be standing in range. The

murderer, though threatened with mob law, was secured by the guards, and subsequently repeatedly tried in military and civil courts at Sitka, Portland, Oregon, and San Francisco, but was finally released on account of conflicting rulings concerning jurisdiction.

In the summer of 1870 the organ of the tailor journalist was removed from Sitka to Seattle, Washington territory, and shortly after passed out of existence. This event, unimportant as it seemed in itself, marks the end of the brief period of sudden rise and fall of commercial prosperity in Sitka. The causes instrumental in creating a temporary bustle and hopeful feeling in business circles have been explained above; but when one ship after another took the Russians away to their native country the flow of cash from their pockets ceased; the garrison was being continually reduced in numbers, and in 1870 business was dead. There remained about sixty soldiers, about two hundred Russian half-breeds of the lowest order, and a few Americans, and the town which had once held nearly a thousand Russians, the governor with a large retinue of officers and officials, a bishop with his train of priests, and which then was the scene of gay society life, was now almost deserted. The people who had been so sanguine of success, saying that the fisheries, the fur-trade, the timber, and the minerals needed but American enterprise to yield fortunes, had been singularly blind as to the real cause of this spasmodic prosperity of Sitka, and but few could understand that the resources of a northern country are few and slow to develop.

During the year 1870 the western military garrisons were withdrawn, and the substantial buildings erected at great expense of labor and money were abandoned. It would be difficult to point to a single benefit conferred upon the people of those regions by the temporary sojourn among them of the military forces. A small detachment of soldiers had also been stationed on the seal islands to enforce such regulations as had then been promulgated by the treasury department for the protection of both sealers and seals. This measure benefited only the soldiers themselves, who were employed by the traders in killing and skinning the seals, and in this way assisted in the threatened extermination rather than in the protection of these animals. Fortunately for the existence of the valuable fur-seal industry, the government about this time hit upon the only practical plan to preserve the animals from destruction. The islands were declared a treasury reservation, and by an act of Congress approved July 1, 1870, the islands of Saint Paul and Saint George were leased for a term of twenty years to a corporate company. The lease was awarded to the highest bidder, the Alaska Commercial Company, located at San Francisco; and since that time all danger of extermination or a decrease in the number of the seals has been averted, and in fact, at present a steady, gradual increase can be observed.

During the brief period of prosperity, between September, 1867, and August, 1869, the arrivals of vessels at Sitka were 71, with an aggregate tonnage of 13,339, the departures during the same time being 67, with an aggregate tonnage of 12,371; but from that time forward the shipping of the port was confined almost entirely to the monthly mail-steamer, the only means of communication between Sitka and Washington territory, and all intercourse between Sitka and the western portion of Alaska was absolutely at an end.

In 1872 another difficulty with the Sitka Indians occurred, originating in a fight between a soldier and an Indian. In the fracas ensuing three Indians were wounded and an attack upon the garrison was threatened. The affair was settled, however, without additional bloodshed. The garrisons at Sitka and Wrangell are still maintained, but on the 5th of February, 1873, the last mayor of Sitka, George A. Edes, resigned, and the "council" held its last meeting on February 18 of the same year. As the functions of these officers had been exceedingly limited, no social revolution followed this event, and matters went on much as usual under military rule.

In the beginning of the year 1874 the garrison at Wrangell was withdrawn, but owing to disorder among the natives it was re-established the following year.

In the year 1874 an attempt was also made to colonize Alaska with Icelanders, who were then leaving their own country in large numbers, and two of these people were taken to Alaska on a United States man-of-war, and given every opportunity to view the country. They were pleased with what they saw, declaring that the Kadiak archipelago and the coast of Cook's inlet were far superior in natural resources to their former home, but before their favorable report was in the hands of the government their people had found more pleasant homes in the western states and in the British possessions. The Alaska Commercial Company at that time offered to transport a colony of five hundred Icelanders to any portion of Alaska free of charge, but unfortunately the offer was not accepted, and the opportunity of securing additional permanent population for at least some portions of Alaska passed by. During the same year four miners from the Cassiar "diggings", in British Columbia, made their way to the headwaters of the Yukon, and descended that stream. They discovered small "prospects" of gold in a few localities, but found it more profitable to engage in the fur-trade, in which pursuit they still continue.

During the years following several bills were introduced in Congress looking to the establishment of some sort of civil authority in Alaska, one of them being to make it a county of Washington territory, and another to annex the country to Washington territory altogether. All the various measures proposed fell through without action on the part of Congress until 1877, when the troops were finally withdrawn.

In 1878 the Sitka Indians began to comport themselves in the most insolent manner; defacing the graves in the Russian cemetery, pulling down the stockade separating the town from the Indian settlement, and committing other similar outrages. At that time not even a revenue-cutter was present in the harbor, and the inhabitants, becoming very much alarmed, sent an appeal for immediate protection to the commander of an English man-of-war.

in the harbor of Victoria. The assistance was promptly rendered, just in time, it was claimed, to prevent disaster; opinions on that subject were, however, divided. In due time the English man-of-war was relieved by a similar vessel of the United States navy, and since that time a vessel of that class has been constantly stationed in the harbor of Sitka, affording protection and assisting the inhabitants of southeastern Alaska in various ways.

Ledges of gold-bearing quartz had been discovered in the vicinity of Sitka before the removal of the troops, but considerable difficulty was encountered in securing the necessary capital to open the mines; but finally some capitalists in Portland, Oregon, formed a company, and for a time the prospects of Sitka were once more brightened. A stamp-mill was erected, but, though numbers of other claims were located and opened, the ore existing here was found to be of a very low grade, and would not even pay for the most economical mode of working. For years the enterprise was kept up in the constant hope of "strikes" of better ore, but at present the Sitka quartz-mines are practically abandoned. On the coast of the mainland in the vicinity of Wrangell a surface-mining camp of small extent has been in existence for several years, yielding a small profit to two or three proprietors of the claims. The most promising discovery of the kind was made at the end of the season of 1880 on the coast between Takoo and Chilkat inlets. The gold found here is said to exist both on the surface and in quartz-veins, and rich specimens were forwarded to Portland and San Francisco, resulting in a rush of miners and speculators during the spring of 1881, and a town sprang up which has boasted of three names during its brief existence—Harrisburg, Rockville, and Juneau City. The mail-service was extended to this place, and shipments of bullion were actually made, the exact value of which cannot be ascertained. Of the value of this discovery it is impossible to judge at such an early date, but upon its success depends the development of at least this section of Alaska in the immediate future. In the meantime, in the absence of all legislation on the subject, Alaska remains as it has been, an abnormal appendage to our states and territories—not a territory even in name—only a district for the collection of customs.

CHAPTER V.—NOTES ON ALASKAN ETHNOLOGY.

The native tribes of Alaska offer a vast field for the labors of students of North American ethnology. Thus far they have only been roughly grouped in families and tribes by various writers, many of whom, possessing no personal knowledge of the subject, have built up theories from the notes of incompetent and casual observers. As an instance of this we may cite that casual remarks of travelers on the facial similarity existing between certain Aleutian individuals and the Japanese resulted in the positive and reiterated assertion by scientific writers that the former migrated to their present homes from eastern Asia—a theory now thoroughly exploded by recent authorities.

Our knowledge of the distribution and classification of the tribes in the extreme northwest is still very limited, and years of careful investigation will be required to enable us to arrive at any satisfactory result and to attain to any degree of accuracy. Some fragmentary ethnological material from Russian-America has been furnished in times past by Russian and German writers; Veniaminof, Davidof, Zagorskin, Wehrman, Baer, Wrangell, Holmberg, and others have given to the scientific world valuable contributions on this subject. Veniaminof (who died but a few years ago in Moscow as the metropolite or primate of the Russian church) was one of the most reliable and painstaking investigators, but his personal observations were limited to the Aleutian islands and the Alexander archipelago. Davidof, an officer of the Russian navy, visited the island of Kadiak and the adjoining continental coast at the beginning of the present century, and Holmberg also devoted himself chiefly to the Kadiak and Sitka districts. To L. Zagorskin, a lieutenant of the Russian navy, we owe our first definite knowledge of the tribes of Norton sound and the lower Yukon region. Another naval officer, Lieutenant Wehrman, compiled in 1857 the first map showing in colors the distribution of native tribes in Russian America, a map quite accurate in its main features. Next in order is the manuscript map, also in colors, compiled by Dr. George Gibbs from information obtained from the Russian authorities at Sitka.

Since the purchase of Alaska by the United States the most valuable contributions to its ethnology thus far published have come from the pen of Mr. William H. Dall, of the United States coast and geodetic survey, who also compiled a map in colors, which was printed with Volume I of *Contributions to North American Ethnology*. A vast amount of ethnological material relating chiefly to the Yukon basin in the extreme northwest has been collected by Mr. E. W. Nelson, of the United States signal service; but this has not yet been given to the public. During repeated and extended journeys in Alaska I have been enabled to glean some fragmentary knowledge of this subject; but until intelligent investigation can be extended systematically over all sections of Alaska, and the results carefully compared and sifted, the work cannot be looked upon as complete.

All that can be done at present in the way of classifying the natives of Alaska is to divide them into four distinct families or tribes, whose habitat and boundaries can be defined with a certain degree of accuracy, subject to future corrections. The numerous subdivisions of each family (based chiefly upon dialectic differentiation) can only be vaguely indicated, in the hope of furnishing to future investigators a frame-work upon which to build a more satisfactory structure.

A comparison of the ethnological map published with this report with those previously compiled at various times will show the gradual acquisition of knowledge on this subject. The differences between the latest map and the one preceding (compiled by Mr. William H. Dall) are slight, and give evidence only of an extension of the field of investigation. This result is all the more gratifying because Mr. Dall and myself have arrived at very similar conclusions through entirely different channels, and without consultation upon the subject. The crude ground-work accomplished earlier by Russian and other writers was, of course, equally accessible to both of us, giving to a certain extent a common base to start from.

The four families or groups now distinguished in Alaska are the Eskimo (or Innuit), the Aleut (Oonangan), the Thlinket, and the Athabaskan (or Tinneh). The first three named occupy the whole coast of Alaska, forming as it were a barrier between the Athabaskan in the interior and the sea-coast, except in one instance, where the latter people have succeeded in supplanting the Eskimo on the shores of Cook's inlet. The evidence in favor of ascribing to the Eskimo and to the Aleut a common origin is quite strong, but time and circumstances have wrought such changes in both physical and linguistic features of the Aleut tribes that a distinct classification appears justifiable. For the purposes of this report I have adopted the terms Eskimo and Athabaskan, in lieu of the Innuit and Tinneh of recent writers, purely in the interest of uniformity, and in deference to the action of both the American and British science associations, which have decided that priority must prevail, and that the name first given to a race or tribe in scientific classification must be retained. The terms Innuit and Tinneh represent words in their respective languages, and as such I should prefer them, but I am quite willing to bring a sacrifice upon the altar of uniformity in the work of science. In taking leave of these terms, therefore, I will only mention that *Innuit* was derived from a root signifying *man*, and existing in a majority of the Eskimo dialects. I find this root as *innuk*, *niuk*, *yuk*, *yut*, *liuk*, and *liuk*; the plural being generally formed in *ung* or *uin*, with a collective form ending in *t*, meaning *people*. It has been suggested that the word *ina*, which signifies *house*, *dwelling*, in nearly all the dialects, has been blended with this root in order to describe a people living in houses, or a settled tribe; but in view of the nomadic habits of the Eskimo this theory is open to doubt. In the dialect of the easternmost Eskimo tribe on the Pacific coast, the Chugachimute, *ina* designates a *house*, but the word for *people* is *shuit* or *shvit* (from *shuk*, *man*). Zagoskin, whose observations extended over several years, stated that after much questioning of various individuals he arrived at the conclusion that *yugguit* or *yughuit* was a collective or plural of *man* with the Norton Sound tribes, and that *kangyulit*, *kanialit*, or *ngyulit* was the general name of all the coast people from the Arctic to the Aliaska peninsula, and that this term signified *people of one language*. The only evidence in our possession confirmatory of this assertion of Zagoskin is the name of Kangmali Innuin, reported by Richardson, and used by Dall as applying to certain tribes on the Arctic coast; to which we may add the fact that with the Bristol Bay and Togiak Eskimo the word *kang* means *the same*. Zagoskin also gives the word *kangakhtuik*, *to speak*.

The word Tinneh in various forms signifies *man* in a majority of the dialects of Alaska, and I find it in the form of *tinné*, *tinne*, *tenna*, *tynnai*, *kinna*, and in the collective *kokhtane*, *khotana*, and *ahtena*.

In discussing these four families or tribes I shall proceed without reference to their relative importance, beginning with the Eskimo.

I.—THE ESKIMO (or Innuit).

The Eskimo or Innuit, numbering nearly 18,000, inhabit the whole coast-line of Alaska west of the one hundred and forty-first meridian, with the exception of the northern part of Cook's inlet, that portion of the Aliaska peninsula lying west of the one hundred and fifty-seventh meridian, and the Shumagin and Aleutian groups of islands. The origin of the Alaskan Eskimo has been discussed by various authors, most recently by Mr. William H. Dall, in Volume I, *Contributions to North American Ethnology*, but the only tangible result of such discussion has been the establishment of a general belief that these tribes are of American origin, and that their appearance on the Alaskan coast probably occurred at the same time with the general migration resulting in the settlement of the inhospitable regions where are now found the eastern or Greenland Eskimo.

For reasons elsewhere explained more at length it appears improbable that the settlement of the Alaskan coast and the islands by the Eskimo could have been effected without the aid of the kaiak, or skin-canoe, or at least a craft of similar construction, and consequently it may be presumed that they spread gradually to the westward and southward after having reached the Arctic shore from their original habitations in the interior of our continent; for the present, however, I have nothing to do with this question, the discussion of which rests chiefly upon speculation, and therefore turn to a description of the tribes of Eskimo stock now found in Alaska.

All the Eskimo tribes without exception manufacture and use the covered skin-canoe known as the kaiak, identical with that of the eastern or Greenland Eskimo; and this feature is so distinctive and exclusive that

a tribal name might justly be based upon it should the necessity arise for another. At present I know of only one instance where an intermixture of the Innuitt with another tribe has taken place under such circumstances that the foreign element has gained the upper hand, and there they have already abandoned the manufacture of the kaiak and apparently forgotten the art of its construction; I refer to the Onghalakhmutes, who have mixed with the Thlinket. The open skin-boat, the *oomiak*, or woman's boat, also known as *bidar*, is used by certain tribes on the north coast of Asia; but the kaiak proper is only found among the Eskimos.

When the Russians first observed this craft they applied to it the name of *bidarka*, a diminutive of *bidar*, a Kamchatkan term for an open skin-boat. This term is now used throughout Alaska wherever Russian influence once predominated, and the same word has been incorporated into several Eskimo dialects in the form of *bidali*, which is, however, applied only to two- and three-hatch kaiaks—a variety formerly known only on the Aleutian islands, and adopted by the Russians for greater convenience in hunting and traveling. From Bristol bay westward and northward the kaiak and the *oomiak* only are used.

The subdivisions thus far made of the Eskimo tribe inhabiting the Arctic coast are based almost wholly upon locality and dialectic differentiation as reported by traders and whalers who come in contact with them; but for the purpose of classification it would seem sufficient to here use the term Arctic Coast tribes as one subdivision.

The Arctic-Coast tribes include Dall's Kopagmutes, Kangmalmutes, and Nuwukmutes, and all the coast villages down to Cape Krusenstern.

In their mode of life all the people living on the coast between the British boundary and Kotzebue sound are very much alike. Some settlements are inhabited chiefly by whale-hunters, while at others much time is devoted to the pursuit of reindeer, each industry engendering different habits and customs, but they all have subterranean winter houses and skin-covered tents for summer use. Though they have been in contact with whites directly and indirectly for nearly a century there are still found in use among them many implements fashioned of stone, ivory, and bone; and they still consume much of their fish, seal- and walrus-meat, and blubber in a raw state. But a remarkable contrast to their primitive condition is furnished by specimens of carvings, chiefly masks and human figures, deposited in the national museum by Mr. E. W. Nelson, many of which may justly be classed as artistic sculpture. A large amount of ready-made clothing finds its way into the hands of these people, who wear it in the summer, but the excessive cold of winter compels them to resume the fur garments formerly in general use among them. The heavy parka of reindeer-, wolf-, or dog-skin, is the outside garment worn by both sexes; undergarments are generally fashioned of the tanned skins of reindeer, or of hair-seal- and fox-skins, the latter being used for trimming; and the high boots worn by both sexes are made of hair-seal- and reindeer-skins.

Of the tribal organization of these people but little is known, but there seems to be no recognized chieftainship; each isolated settlement generally containing one man who makes himself prominent by superintending all intercourse and traffic with visitors. The profits accruing to him from this position give him some slight influence among his people; but the *oomailik* (*oomialik* of Zagoskin), as these middlemen or spokesmen are called, possess no authority over the people of their village, who pay far more attention to the advice or threats of sorcerers, shamans, or "medicine men". In the festivals, consisting of feasting, singing, and dancing, with which these hyperboreans while away the long winter nights, the shamans also play a prominent part, directing the order of the performances and the manufacture of masks, costumes, etc., while the *oomailik* or spokesman sinks back into insignificance for the time being.

During the brief summer a large proportion of these people roam eastward and westward along the coast trading and hunting. In late years their movements have been guided chiefly by those of the whalers pursuing their quarry in the narrow belt of open water between the solid ice and the coast.

THE KOPAGMUTE (Big River people).—In this subdivision I include all the Eskimo tribes living in the western interior of Arctic Alaska. Their habits are almost entirely unknown beyond the fact that they form the connecting link between the coast people in the north and the Athabaskans in the south.

THE NUNATAGMUTE (Inland people).—This subdivision includes both the Nunatagmutes and Kowagmutes of Dall, comprising the inland tribes living on the Noatak and the Kowak rivers. Of these people we also know but very little beyond the fact that they live on the upper rivers, have communication with the Athabaskans of the northern Yukon region, with whom they have mixed, on the headwaters of the Koynuk river. Mr. E. W. Nelson, who saw some of these half-breeds on Kotzebue sound, describes them as resembling in stature and facial peculiarities the Athabaskan, while speaking an Eskimo dialect.

THE MAHLEMUTE.—The Mahlemutes inhabit the country between Kotzebue and Norton sounds, occupying villages upon the coasts of both these estuaries. In their mode of life they resemble the Arctic Eskimos, but they are the traders *par excellence* of all this region; indulging, however, frequently in robbery and violence when trade is slack. They serve as middlemen in the exchange of commodities between Bering sea and the Arctic, drawing their supplies of stock in trade chiefly from the depots of Saint Michael, which place they visit during the summer in large open skin-boats fitted with masts and sails. The Mahlemutes are expert navigators and bold hunters, but

their reputation with whalers and traders is decidedly bad, and great caution is observed in intercourse with them. They are naturally anxious to maintain their profitable position as middlemen, and thus far have resented all attempts to locate permanent trading-stations among them or within the limits of their own mercantile operations.

In dress and appearance the Mahlemute do not differ from their neighbors. In the sketch herein inserted they are represented as they appear in their summer encampments on Norton sound. The southernmost village permanently occupied by the Mahlemute is Shaktolik, on Norton bay, but several families possess winter houses in the vicinity of the trading-post of Oonalakleet, within the boundaries of another tribe. Their festivals are distinguished for variety, there being one in honor of nearly every animal hunted by the people, most of them being celebrated during the period of winter idleness, the "reindeer dance" and the "whale dance" being among the most important ceremonies, which are accompanied by the most grotesque display of masks and costumes. The "labret" or cheek ornament, of bone, ivory, or stone, is still worn by the Mahlemute as universally as it is found among the coast tribes in the north and west; and even where the ornament itself is absent the cut made in the cheek and under lip for its insertion can be observed. All the masks are provided with an imitation of this ornament. The custom of trimming the hair of the head exists among the Mahlemute as well as among nearly all the tribes of Eskimo stock, but the shaving of the entire crown of the head of males seems to be confined to the Arctic tribes. Wherever the Eskimo appear together with their interior neighbors it is easy to distinguish the long, unkempt, matted hair of the Athabaskan from the closely-cropped bullet heads of the Eskimo.

THE KINGIGUMUTE (including the Okeeagmut of Dall and the Okeeagmut of King's island).—This unruly and warlike tribe occupies the country adjoining cape Prince of Wales and the islands of Bering strait. They are also great traders, and act as middlemen between the people of Asia and those of America. They hunt but little, living chiefly on the profits of traffic. Their reputation with whalers and traders is fully as bad as that of the Mahlemute on Kotzebue sound. Their festivals and superstitions closely resemble those of their neighbors; and the same can be said substantially of their southern neighbors.

THE KAVIAGMUTE.—This tribe occupies the portion of the Kaviak peninsula south of port Clarence and east of Norton bay and the Mahlemute territory.

THE OONALIGMUTE (the Unaligmute of Dall).—This tribe occupies the coast of Norton sound from Shaktolik down to the mouth of the Yukon, extending back into the interior as far as the range of hills forming the boundary between the Eskimo and the Athabaskan tribes.

THE IKOGMUTE.—This tribe occupies both banks of the Yukon river from its junction with the Chageluk river near the village of Paimute to its mouth, occupying the east coast between Kotlik and the Kusilvak branch of the Yukon.

THE MAGMUTE (or Mink people).—This tribe adjoins the Ikogmte in the south, extending to the line between the Kvichak river and cape Rumiantzof.

THE NUNIVAGMUTE.—This tribe occupies Nunivak island, and also a few settlements on the Kashunok branch of the Yukon.

THE KAIALIGMUTE.—This tribe occupies the coast from cape Rumiantzof to cape Avinof, with the exception of the Kashnnuk settlement, but including the villages on Nelson island.

The three tribes last enumerated were classed together by Dall as Magmutes, but sufficient differentiation has been discovered by Mr. Nelson to warrant the new divisions.

To all the coast tribes between Kotzebue sound and the mouth of the Kuskokwim river may be applied the description furnished by Lieutenant Zagoskin in the year 1843. He stated in substance that the natives of Norton sound and their neighbors are of medium stature, well built, quick in their movements, with round faces varying in complexion from an almost white to a light brown. All the males exhibit some trace of beard, and mustaches are quite common. The hair is black, coarse, and straight, but glossy; the mouth large, not curved; teeth even and white. The men wear labrets in the lower lip on each side of the mouth, consisting of stone or bone buttons; but among the females this latter custom has long been obsolete. The men trim their hair all round the head, while the women confine this operation to the vicinity of the ears, wearing the back hair either loose or plaited.

No chiefs are known to exist among them, though some families have acquired prominence and influence, chiefly through the accumulation of what they consider wealth. The oomailik, the most experienced tradesman of the village, who serves as spokesman in all transactions with strangers, exerts his influence only as agent or business manager. If a joint action of a number of the inhabitants of a village becomes necessary for any purpose, the old men assemble in the council-house, or kashga, where they settle upon the plan of action for the distribution of labor; and no young man will venture to disregard the decision of his elders in council.

These coast tribes, being essentially a trading people, are possessed of greater shrewdness than their neighbors in the interior, but they rarely use this superiority for the purpose of cheating in trade, as all their capacity in this direction is reserved for their intercourse with white people. As a rule these tribes do not practice polygamy, though a few instances have been known of wealthy traders who maintained separate households in the various settlements visited in pursuit of their business. No especial marriage ceremony seems to be observed, though the consent of parents seems to be essential to the accomplishment of a union. The bridegroom either takes away his bride to his own people or she remains with her family. Separations rarely occur, but in such cases the children remain with the mother. A man who has lost two or three wives rarely succeeds in obtaining a fourth.



MATHEM - 1900 AND WOMAN

and great care is exercised in intercourse with them. They are probably about as good as any made at Washington, and those far have re-enacted all the important battles of the war, and won them. The Indians have been in many little operations.

The sketch herein inserted
The southernmost village
lines possess winter houses
tribe. Their festivals are
the people, most of them
"hale-dance" being among
marks and costumes. The
is universally as it is found
t the cut made in the cheek
itation of this ornament:
long nearly all the tribes
be confined to the Arctic
in the ornately carved bone heads of the Eskimo.

giant (and the Ocean east of Kit's bound).—This mainly and
chiefly cap the Vales and the island of Bring strait. They are
the great leaders and are of much importance. They hunt but little,
but their population and traders is full as bad as that of the
Bashaw. The men are tall and well made, but resemble those of their neighbors; and
are known by their long hair.

¹ See also p. 200, note 1. The portion of the Lyrauk peninsula south of port Charron and east

(Continued from page 60.) It encompasses the east of Norton's and front Southwick
and the greater part of the range of hills forming the boundary
between the two parishes.

On the northern bank of the Väinäjärvi river from its junction with the Gagulinko occurs the hill of the King of Kotka and the King's church.

the hill-side on the right, and the Kingstone to the south, extending below the line between

Kamchatka - The coast from cape Ruminzof to cape Avilof, with the exception
of the villages on Nevel'sk island.

The natives of Norton Island, as far as I can learn, are of the Kotzebue type, and the mouth of the Kuskokwim river may be applied to them. They were first seen by Captain L. V. M. Dall in 1843, and he described them as follows: "The natives of Norton Island are of medium height, slender, and well proportioned. The face is oval, with a prominent forehead; the nose is straight, broad, and slightly prominent; the mouth large, not curved; teeth even and white; hair black, coarse, and wavy; the men wear buttons in the lower lip, consisting of stone or bone buttons; the hair is worn long, and the men turn their hair all round the head, while the women let it hang down the back; hair either wavy or pointed." The natives of Norton Island are said to be of the same race as those of the Bering Sea coast.

No such any species to point among them, the same was however accompanied by a number of other, chiefly
which were specimens of such they consider valuable. The amount, the cost expensed by the man of the
who comes on commission to the Committee will be reported, from his estimate of his labor and business

... It is a matter of interest in this connection to compare the results of the 1935 survey with those of the 1930 census. The latter showed the population of the city to be 1,000,000, while the former gives a figure of 1,050,000.

people, and you will see that the men of the tribe are more numerous than their neighbors as all their capacity in life is not pract'cally polygamy. I have observed this in the various households in the various tribes. I have observed, though the husband either takes away his wife or she leaves him, that he always gives the children a fourth.



A. Morris & Co. Ltd., Baltimore.

MAHLEMUTE—MAN AND WOMAN.

The females of the coast tribes are not fruitful, and to see four children of one mother is quite a rare occurrence, one or two being the common number of children to a family. Marrying early, as a natural consequence the women fade early; a wife of twenty-five is always an old woman. The children are treated with great tenderness, but grow up in perfect liberty until they are self-supporting, and their every want or whim is satisfied by the parents, even at the greatest inconvenience to themselves. The young of both sexes acquire skill in their respective labors early while playing with the diminutive arms, tools, and implements fashioned for this purpose by their parents. Festivities take place at certain periods during the lives of children; for instance, when the boy's hair is trimmed for the first time, or when he first goes to sea alone in a kaiak, or when he dons his first pair of snow-shoes, or when the first incision in his lip is made to accommodate the labrets, a feast is given by the parents if they are able to do so; but in cases of great poverty these ceremonies are frequently postponed until the young man himself is able to provide the necessary material. No youth is considered to have reached manhood until he has killed either a wolf, a reindeer, or a beluga.

The shamans or sorcerers living among these people furnish children with amulets or charms, consisting of little ivory carvings, or pieces of skin fancifully braided, or other articles to be worn around the neck, and the parents frequently go to considerable expense to secure such talismans.

The men sometimes change their names several times during their lives by assuming a new one after every great memorial feast given in memory of a deceased relative.

A woman after child-birth is not allowed to partake of fresh food for twenty days, during which time she must stay within the house, generally sitting in some dark corner with the infant; and every five days during this period she must bathe.

Like all Eskimos these tribes are superstitious and afraid of the dead or dying, though they seem to reverence the memory of the deceased; and sometimes a sick person at the point of death is carried into an abandoned hut and left there alone to die of hunger and neglect. The dead bodies are generally wrapped up in mats, with the knees drawn up to the chin, and are covered up with rocks or pieces of drift-log; and the skulls of reindeer or bear are frequently placed beside such burying places, especially if the deceased had been a hunter. After the death of a husband the wife cuts her front hair short, and abstains for a period of twenty days from fresh food; the husband frequently observing the same custom on the death of his wife. The festivals in memory of the deceased are celebrated at various times of the year, chiefly at times of leisure between the seasons for hunting various animals. In addition to the annual memorial feasts, grand festivals are celebrated at intervals of ten and fifteen years, according to the ability of the surviving relatives to accumulate sufficient property for the purpose, and on such occasions the giver of the feast frequently distributes all his property among the guests.

The clothing of these coast tribes consists of furs, especially the skin of reindeer. Garments made of marten, musk-rat, or ground-squirrel skins they receive from the Yukon river, while mink-skins are used chiefly for making gloves and the trousers of women. The upper garments, or parkas, have short sleeves and do not reach below the knee, those of the males being the same length all around, while those of the women are slit on the sides. The men wear one pair of pantaloons with the fur inside; the women wear two, one short, reaching not quite down to the knee, generally made of tanned buckskin or reindeer-fawn skin with the fur inside, the other long with the fur outside. They have no buttons or hooks, and the pantaloons are attached to a belt with straps. The boots for winter use are generally made of the skins of reindeer-legs, and reach about half way up the calf of the leg; some of these are richly trimmed with wolverine or white-reindeer skin. The summer boots are made of seal-skin, reaching up to the knee and above; the soles being made of the thickest portion of the hair-seal skin. The winter parkas are usually provided with a hood which can be drawn over the head. The most valuable of these garments are obtained from the Mkhlemutes, who purchase them of the Chukches in Siberia. These garments are made of the skins of tame reindeer. A woman clothed in one of these parkas and provided with boots made of the skins of white tame reindeer considers herself dressed in the height of fashion, and attracts much attention from the youths of her tribe. For convenience in walking the parkas are girded up with a belt, the latter being worn far below the waist.

The skin of the wolf is much valued for trimming garments, and to obtain these the coast tribes formerly resorted to an artifice which has been superseded at present by the use of steel-traps. In the middle of winter, when the snow was deep and the wolf hungry, the hunter would whittle down strips of whalebone about two feet in length, roll them up, wrap them in pieces of seal-blubber, and throw them promiscuously about the vicinity. A hungry wolf would bolt down one of these frozen lumps, when, the heat of the stomach melting the fat, the piece of whalebone would be released and straighten out, killing the animal, and in the morning the hunter would go out and pick up his quarry.

Reindeer are generally captured by these tribes by surrounding the herd and shooting the animals with arrows or bullets as they approach the concealed hunters. Fish are caught both with nets and hooks and lines; and seals are generally shot or speared on the ice in the winter, or as they come up to their breathing-holes. While watching for seals the hunter piles up pieces of ice before him and wears a white-reindeer skin parka in order to conceal himself from the vigilant animal. The beluga is hunted by numerous parties in kaiaks. Sometimes a hundred or more of the natives proceed to sea on a calm summer day, observing perfect silence, and keeping well

inshore. As soon as a school of belugas is sighted an old man gives a signal, the kaiaks hurry to seaward of the school, and a tremendous noise begins, with shrill cries and yells, beating of drums and rattles, and splashing of paddles and spears in the water. The hunters gradually approach the shore, driving the belugas before them, until the latter, in the shallow water, fall an easy prey to their spears. In former times, when the beluga was more plentiful, from one to two hundred were seen in this way in a single day; and the old men and the women and children crowded the shore ready to drag off the carcasses beyond the reach of the tide.

All of these tribes shun the use of iron in killing the beluga, confining themselves entirely to spear- and arrow-heads of stone and bone. Inflated bladders of whole skins of the young seal are attached to the spear-heads, serving to buoy up the wounded animal and keep it from diving. The bladder, meat, and skin of the beluga are all valued alike as food when fresh, and the tanned hide is used for making boots, covering kaiaks, and making nets. The tanning is generally accomplished with rotten fish-roe.

All these tribes have summer dwellings distinct from those used during the winter. For the winter houses a square excavation of about 3 feet or more is made, in the corners of which posts of drift-wood or whale-ribs from 8 to 10 feet in height are set up; the walls are formed by laying posts of drift-wood one above the other against the corner posts; outside of this another wall is built, sometimes of stone, sometimes of logs, the intervals being filled with earth or rubble; the whole of the structure, including the roof, is covered with sods, leaving a small opening on top, which can be closed by a frame over which a thin, transparent seal-skin is tightly drawn. The entrance to one of these houses consists of a narrow, low, underground passage from 10 to 12 feet in length, through which an entrance can only be accomplished on hands and knees. The interior arrangement of the winter house is very simple, and is nearly the same with all these tribes. A piece of bear- or reindeer-skin is hung before the interior opening of the passage; in the center of the inclosure is the fire-place, which is a square excavation directly under the smoke-hole in the roof; the floor is generally planked, and frequently two low platforms about 4 feet in width extend along the sides of the house from the entrance to the back, and covered with mats and skins which serve as beds at night. In the larger dwellings, occupied by more than one family, the sleeping-places of each are separated from each other by suspended mats, or simply by a piece of wood. All the bladders containing oil, the wooden vessels, kettles, and other domestic utensils, are kept in the front part of the dwelling, and before each sleeping-place there is generally a block of wood upon which is placed the oil-lamp used for heating and cooking.

The summer houses are erected above ground, and are generally log structures roofed with skins and open in front; no fire is made in these houses, and therefore they have no opening in the roof, all cooking being done in the open air during the summer. They seldom have flooring, but otherwise the interior arrangements resemble those of the winter houses. The storehouses of all the Eskimo tribes are set on posts at a height of from 8 to 10 feet above the ground, to protect them against foxes, wolves, and dogs. They have generally a small square opening in front that can be closed with a sliding board, and which is reached by means of a notched stick of wood. These buildings are seldom more than 8 feet square by 3 or 4 feet in height.

In every village there is a common building known as the kashga, built after the pattern of the winter houses, but of much larger dimensions, some kashgas measuring as much as 60 feet square and from 20 to 30 feet in height. A raised platform runs all around the interior, and, in a few kashgas of extraordinary size, three tiers of such platforms have been observed. The fire-place in the center is large, often 3 or 4 feet deep, and on ordinary occasions, when no fire is wanted, is covered over with planks. The entrance is through a passage resembling that of the dwelling-houses, but divided at the end; one branch leading to the fire-place below the flooring, the other into the main compartment. In this building the men carry on their domestic labor, such as the preparing of skins, the plaiting of fish-traps, and the manufacture of sleds. In the kashga all public business is transacted and councils held; and it also serves as shelter for all guests and visitors, who are there entertained, as well as the theater for all festivals, mask dances, and representations. In addition to this the kashga serves as a sleeping-place for adult males; and finally, also serves as a bath—the most popular recreation of the Eskimo tribe.

The cooking of these natives is a very simple matter, though they do not eat raw fish or meat unless it is frozen or dried in the air. All the offal of meat and fish is given to dogs. The meat when boiled is never well done, being merely kept in boiling water for a short time. The oil of the beluga or of the seal is considered as the most palatable sauce for everything—meat, fish, or berries; while rotten fish and fish-roe, considered luxuries, are preserved in wooden vessels for festive occasions, and the heads of salmon are buried in the ground to give them the desired high flavor. With such a diet no cleanliness in cooking or eating can be expected. As a rule, these natives are moderate eaters. In the morning the wife or some other female relative brings to the husband, father, or brother who has slept in the kashga, a *kantag*, or wooden bowl, with cold water, together with a piece of dried, frozen, or boiled fish weighing perhaps a pound. After breakfast the men follow their various pursuits of hunting and fishing, and some time in the afternoon, having indulged in a bath, they partake of another piece of fish or meat of about the same weight, with the addition of a tit-bit of rotten fish or spawn, which they eat sitting on their haunches, while the women turn their backs to them, as it would be unbecoming to watch them eating. Visitors are thus served by the wives or daughters of those whom they visit. An evening meal is frequently, but not always, partaken of at home in the dwellings; but the women and children always eat at home.

Their means of transportation consist in the kaiak, the oomiak (bidar), and in winter the dog-sled, as they are all alike skilled in propelling the kaiaks and in the management of dog-teams.

The sleds used by the coast tribes are generally from 8 to 12 feet long, and the dogs are harnessed tandem. Their snow-shoes consist of a very light frame of spruce wood over which is stretched a network of seal-hide, which supports the foot—the toes only being attached to the shoe by means of a small strap. The length of the Eskimo snow-shoe is about 3 feet.

In addition to the spears propelled by hand used in hunting the beluga and the maklak seal the coast tribes also have spears especially adapted for killing birds and reindeer; these they shoot by means of bows; and the bird-spears are divided into several prongs, with the object of dragging down the bird if it be not killed. The spear-heads for killing reindeer are made of walrus-ivory, and are provided with teeth on one side; these weapons are still preferred to bone points. The shafts of both arrows and spears are made of spruce or larch wood, obtained on the Yukon at the head of Norton bay; the length of the shaft is from 2 to 3 feet, and that of the bone head from 5 to 6 inches, while the point proper measures about 2 inches. The bows also are manufactured of spruce and larch wood, and the strings are made of the sinews of the seal or whale.

Independent of the great annual and periodical festivals accompanied by religious or superstitious rites, and to attend which the people from different villages flock together, the coast tribes also indulge in private festivals or evening entertainments during the late autumn and the beginning of winter. As among other mortals, singing, dancing, and eating form the principal objects of such merry-makings. On these occasions, however, one family does not invite another to pass the evening, as either the whole population of the village attend promiscuously, or the women invite the men, treating them to delicacies of their own providing, or *vice versa*. To pass the time, masquerading is often resorted to, in which case the women who give the entertainments appear in male garments, with mustaches, and with bead pendants in the under lip, and dance like the men; the latter, on the other hand, representing women.

The subjects of their songs are of indefinite variety, but the melody as well as the time of their only musical instrument, the bladder drum, is always the same: first one stroke, then a pause; then two strokes, the second stronger than the first, then another pause; again two strokes, a pause; and so on, producing a rather monotonous noise.

All these games, both private and public, take place in the kashga. At the public performances the dancers and singers, men and women, stand around the fire-hole; and the men, to the time of the drum and the singing, go through various contortions of the body, shifting from one foot to the other without moving from the spot, the skill of the dancer being displayed only in the endurance and flexibility of his muscles. The women, on the other hand, with their eyes cast down, motionless, with the exception of a spasmodic twitching of the hands, stand around in a circle, forming, we may say, a living frame to the animated picture within. The less motion a dancer displays the greater his skill. There is nothing indecent in the dances of the sea-board natives. The dancing dress of the men consists of short tight drawers made of white-reindeer skin, and the summer boots of the Chukchee, while the women on such occasions only add ornaments, such as rings and bracelets and bead pendants to their common dress, frequently weighting themselves down with 10 or 15 pounds of these bangles.

The entertainment of the women was described by Zagoskin as follows:

We entered the kashga by the common passage and found the guests already assembled, but of the hostesses nothing was to be seen. On three sides of the apartment stone lamps were lighted, the fire-hole was covered with boards, one of them having a circular opening, through which the hostesses were to make their appearance. Two other burning lamps were placed in front of the fire-hole. The guests, who formed the chorus, began to sing to the sound of the drum, two men keeping them in order by beating time with sticks adorned with wolfs' tails and gnalls' wings. Thus a good half hour passed by. Of the song my interpreter told me that it consisted of pleasantries directed against the women; that it was evident they had nothing to give, as they had not shown themselves for so long a time. Another song praised the housewifely accomplishments of some woman whose appearance was impatiently expected with a promised treasure of the mixed mess of reindeer-fat and berries. No sooner was this song finished than the woman appeared and was received with the greatest enthusiasm. The dish was set before the men, and the woman retreated amid vociferous compliments on her culinary skill. She was followed by another woman. The beating of drums increased in violence and the wording of the song was changed. Standing up in the center of the circle the woman began to relate, in mimicry and gesture, how she obtained the fat, how she stored it in various receptacles, how she cleansed and melted it, and then, placing a kantag upon her head, she invited the spectators with gestures to approach. The song went on, while eagerness to partake of the promised luxury lighted up the faces of the crowd. At last the wooden spoons were distributed, one to each man, and nothing was heard for a time but the guzzling of the luscious fluid. Another woman appeared, followed still by another, and luxuries of all kinds were produced in quick succession and as quickly dispatched, while the singers pointedly alluded to the praiseworthy Russian custom of distributing tobacco. When the desired luxury had been produced, a woman represented with great skill the various stages of stupefaction resulting from smoking and snuffing. All the women appeared in men's parkas.

The men's entertainment witnessed by Zagoskin took place in the same village. The preparatory arrangements were the same, one of the women, a sorceress, leading the chorus. The first song on that occasion praised the propensity of the Russian for making presents of tobacco, rings, and other trifles to the women, who, in their turn, were always ready to oblige them. This, however, was only introductory, the real entertainment beginning with a chorus of the men concealed in the fire-hole. The gist of their chant was that trapping, hunting, and trade were bad, that nothing could be made, and that they could only sing and dance to please their wives. To this the women answered that they had long been aware of the laziness of their husbands, who could do nothing but bathe

The huge stone lamps for lighting do not require any repairs, and are handed down from generation to generation; but if any material is wanted, such as planks, dried grass, etc., for repairing the building, it is at once furnished by those who happen to have it on hand.

A few of the men prepare breakfast in the kashga, but to most of them the meal is brought in by their wives or some other female relatives. After breakfast it is deserted for a time, the men going out to look after their traps and fish-nets, or to hunt in the neighborhood. The women assist their husbands in harnessing the dogs and then, in their turn, go out to gather dry wood, or employ themselves in domestic labor, sewing or patching, making threads from deer-tendons, or plaiting mats or socks. Nearly all the coast tribes here discussed wear, always in the summer and frequently during the winter, socks made very skillfully of dried grass by the women. Occasionally a woman may be seen hammering with all her might one of the posts of a storehouse without any apparent purpose; she is in the last days of pregnancy, and that kind of exercise is considered conducive to an easy delivery. The boys and girls scatter about the vicinity to look after their snares and traps set for hares and grouse. About an hour after noon the thickening, whitish smoke arising from the dwellings indicates the dinner of the children; after that the adults assemble for the same purpose. The wife divests her returning husband of his wet garments, unharnesses the dogs, deposits the sled on the roof of the dwelling, and stores away in the storehouse the fish or game brought home by the husband, always laying aside a portion for days when the inclement weather will keep the provider at home. During the winter from four to five days frequently pass when the hunters have no opportunity to leave the house to look after their nets and traps. The dinner over, the kashga begins to fill up. Men bring their work and pass away an hour repairing arms, tools, nets, and other implements, until somebody suggests a bath; this meets with general approbation, and preparation begins. Wood is carried in by the armful, the fire lighted, and the men bring from their houses their toilet articles—a wisp of dry grass, a basin, and a few branches of alder for whipping themselves into perspiration. At last the bath is ready; the kashga is heated to suffocation and full of smoke; the men throw off their garments, and with shouting, dancing, and whipping bring themselves into perspiration; then a liberal application of their disgusting substitute for soap produces a lather, which is rinsed off with cold water and finally removed by the bathers rushing out of the building and rolling in snow, or jumping into the river should it be free from ice. The first part of the process creates a terrible stench in the kashga, which is still increased and perpetuated by throwing the remains of the fluid contained in a bowl into the four corners of the building. While the men are indulging in the bath we will watch the sports of the young people outside. Some boys and youths have organized a jumping match; a number of willow branches are placed upon the ground at a distance of 6 or 7 feet from each other, and the contestants endeavor to jump from branch to branch without removing them from their places. Gradually the distance between the marks is increased until but a few active individuals succeed in accomplishing the feat. In the meantime the women are chasing each other over the snow, screeching and laughing, and if one happens to fall she is jeered most heartily and nearly smothered with snow thrown upon her by the spectators. The bath being over, the opening in the roof of the kashga is uncovered, and the men sit around the platforms, stupefied with heat and smoke and weak from profuse perspiration. Some of the more ambitious youths propose another contest, while the fresh air gradually enters the kashga and makes it habitable once more. An arduous task is set—to go to the river and in the shortest possible time to pierce the ice, at least 4 feet in thickness. One of the old men is chosen as umpire and the whole party proceeds to the river bank. The tools employed are crude ice-picks and bone crowbars, and it is astonishing with what rapidity this solid ice is pierced, while a shower of sparkling fragments flies up and over the ambitious workmen. In five or six minutes the feat is accomplished, water welling up through the opening made by the victor, who is escorted back to the kashga amid general acclamation.

Evening is approaching, the people are scattering about the village, when away in the distance on the ice of the river two sleds appear in sight, and children playing on the river bank are first to discover them; but no particular attention is paid to the incident. The travelers approach and put up at one of the dwellings; it is a family consisting of a man, a woman, a grown-up daughter, and a small boy. Nobody meets them, but the new arrivals, seeming perfectly at home, tie their dogs to the posts of the storehouse, discharge their lot of provisions or utensils, and place the sleds on top of the roof. The women and the boy then enter the house while the man proceeds to the kashga, which he enters without any solicitation—in fact, words of salute are missing in the vocabulary of this people. Making his way to one of the platforms he shakes the snow from his boots, then takes them off and hangs up his outer garments to dry; he then divests himself of his gloves or mittens and draws his arms out of the sleeves of the inner parka. Seating himself he may remark to the man next to him, "I sit beside thee," to which the other will answer "Tavai, tavai"; an expression of assent, with no very definite meaning. The new-comer then lights his pipe or takes a pinch of snuff, and after thus refreshing himself begins to talk. He does not address himself to anybody in particular, but communicates what has happened along the line of his journey, what he has seen and what he has heard in the various villages through which he has passed; but everything is related in a disguised, indefinite manner. For instance, he says: "Russians or traders have been in such a village and made presents of tobacco." This means that he has seen the strangers and himself received presents, without specifying where the meeting took place and what other villages were visited by the Russians. Or he will say that such a man lies in the kashga dressed in a new parka, with his head against a wall; which means that somebody has died.



A. Hahn & Co. Lith. Philad.

KUSKOKWEMUTE—MALE SUMMER DRESS

Again he says in such a hasty manner that oil and blubber are plenty with us, you have returned from a long hunting trip, and fortunate in hunting, is only a certain kind of the first narrative just described exclamation.

The stranger has not come to see any other article he needs. After having told kashga all he wishes to barter, declaring a commodity. Every one present inspects it. He leaves the ka-bga without saying a word. After the inspection of all present. If they try their fortune until a trade is made previously, but, rating his bargains, goes up and returns without any remuneration.

When night comes the old woman partakes of supper in their own house, the oil for the lamp, and flour, left by the stranger, refreshing themselves with a draught of tea, accompanied by the old woman.

sits the people waiting for the old woman.

At last she comes, accompanied by a man,

a raccoon, who had followed her out of the place, and also her young, running merrily about.

wolves; and if all this be so, you must forget one pain in another, while the former is still fresh.

At last she snatches the pipe, from the smoke-hole is removed and the evil spirit drives away.

the triumph after the removal of the pipe.

into a mass of rage from the door. It is the hour nobly named, it was the last hour of the day, when returning, people could not tell or count the hours. The doorway of the old woman's house, and close doors.

According to the custom of the country, the married men, who have eaten the supper.

The Ketchikan Indians number 17,000 and 18,000.

Ketchikan, and are among the best.

brought into contact with the natives of Bristol bay, Nootka sound, and

perceptible, their habitation extending up to the present day. The lab-

oratory, and report, showing

among this tribe, evidence of in-

stated creeds in the third part

days' travel of St. Elias mission,

carved monuments and memorial posts, showing very clear

faint idea of Christianity as may have

been remarkable in a tribe figure,

the almond eye and the general cast

The legs of this figure are crossed in

upon which offerings of tobacco and

red paint were placed. Other monu-

ments of the same kind were found

in the possession of the people.

A young man who had been

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days of sickness, or any other family, he says that while in camp, that the lead of the horse has been taken away, or he was sick, or who was dying, which may be prepared for days. At the return of camp, everyone "dances," an alternative

ut when the dance of the people is over, the principal dancer, who is the leader, dancing for such an object, the others remain silent, on the floor, and when the principal dancer, the article asked in exchange, which is always a remainder silent, the principal with the purchase something of the strangers, and say "This does not suit me." The chief person of equal value with the original article, and the greater part of the men have no wives. The who are well to do, however, have wives, and sail in their launches, and go to the sea to fish, from time to time, and depend heavily upon the sale of the fish.

At the end of the day, the people are gathered together, and the old woman

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Again he says in such a house the shaman or tungak is busy, a sign of sickness; of another family he says that oil and blubber are plenty with them, without going to the trouble to explain that the head of the house has returned from a long hunting or trading journey crowned with success; but who died, or who was sick, or who was fortunate in hunting, is only ascertained upon further questioning, which may be postponed for days. At the time of the first narrative just described nobody makes any remarks except, perhaps, "*Ah kika*," an affirmative exclamation.

The stranger has not come to see anybody in particular, but wishes to dispose of some goods in exchange for other articles he needs. After having told his tale, in the fragmentary manner described above, he brings into the kashga all he wishes to barter, declaring at the same time that for such an article he wishes to exchange such other commodity. Every one present inspects the articles deposited on the floor, and if one finds anything of use to him he leaves the kashga without saying a word and brings the article asked in exchange, which is at once submitted to the inspection of all present. If the stranger is not satisfied he remains silent, the purchaser withdraws, and others try their fortune until a trade is made. Here comes a man who purchased something of the stranger a year or two previously, but, ruins his bargain, returns the article, saying simply "This does not suit me". The other picks it up and returns without any remonstrance anything he has in his possession of equal value with the original price.

When night comes the kashga appears dark and empty, and the greater part of the men have gone to partake of supper in their own dwellings; but gradually they assemble again. Those who are well to do bring their quota of oil for the lamps, others bring their handiwork, while others again sit on their haunches, rocking backward and forward, listening to the narrative of the new arrival or to domestic gossip, from time to time refreshing themselves with smoke or snuff. Suddenly the sound of the drum is heard from one of the dwellings, accompanied by the chanting of the tungak; signifying that some sick man is being doctored. In one of the dwellings sits the patient suffering from fever and rheumatic pains; before him are placed two lighted oil-lamps, and a parka is drawn over his head, while two shamans or tungaks, one standing on each side, alternately sing and beat the drum. Behind them, faintly visible in the semi-darkness, is the head of an old woman, who, while imitating the croaking of a raven, rubs and pounds the back of the patient. If the pain does not cease the old woman changes her tactics and also her voice, imitating successively the chattering of magpies, the barking of dogs, and the howling of wolves; and if all this be in vain she throws herself upon the sufferer, cuffing and beating him until she makes him forget one pain in another, while the tungaks sing louder and louder and the drums give forth a deafening noise. At last she snatches the parka from the patient's head, yells repeatedly, and points to the roof; the cover of the smoke-hole is removed and the evil spirit which has caused the sickness escapes amid the beating of drums and the triumphant cry, "He is gone! He is gone! Ugh! Ugh!" and the old woman, her task accomplished, collapses into a mass of rags upon the floor. It is the third spirit driven out of this patient—how many more dwell with him nobody can tell; if it was the last he will soon mend, but on the other hand, if not the last, there will be more chanting, more drumming, more cuffing, and more payments to the cowering tungaks, until the sick man either dies or can pay no more. The tungaks claim that their science and skill consist in discovering what spirit infests the sick man, and to drive it out they do not consider difficult at all.

At midnight the young men stretch themselves upon the platform of the kashga, which has been deserted by the married men, who have returned to their homes.

THE KUSKOKVAGMUTE.—This tribe (the Kuskokvagmute of Dall, or the Kuskuchevak of Richardson), numbering between 3,000 and 4,000, occupies both banks of the Kuskokvium river from its mouth to the vicinity of Kalmakovsky, and are among the most interesting of the Eskimo tribes bordering upon Bering sea. They were brought into contact with the Russians at an early date (1835), when Kolmakof explored the overland route from Bristol bay to Norton sound, along which route, now no longer traveled, the effects of Russian influence are quite perceptible; but the inhabitants of the lowlands about the river mouth have scarcely come in contact with Caucasians up to the present day. The labors of the Russian missionaries of the Yukon never extended to this region, though their registers and reports show quite a number of Christians on the Kuskokvium river. The only trace of Christianity among this tribe, outside of the immediate vicinity of the trading-station with its chapel, consists of a few scattered crosses in the burial-places adjoining the settlement. At the village of Kaltkhagamute, within three days' travel of the Russian mission on the Yukon, the graveyard contains a remarkable collection of grotesquely carved monuments and memorial posts, indicating very clearly the predominance of old pagan traditions over such faint ideas of Christianity as may have been introduced among the people. Among the monuments in this place the most remarkable is a female figure with four arms and hands, resembling closely a Hindoo goddess, even to the almond eyes and the general cast of features. Natural hair is attached to the head, falling over the shoulders. The legs of this figure are crossed in true oriental style, and two of the hands, the lower pair, hold rusty tin plates, upon which offerings of tobacco and scraps of cotton prints have been deposited. The whole is protected by a small roof set upon posts. Other monuments are scarcely less remarkable in variety of feature and coloring, and the whole collection would afford a rich harvest of specimens to any museum. During my brief stay at this spot it was found impossible to ascertain anything of the meaning of these monuments or to gather any of the traditions of the people with reference to them, though several of the structures were quite new, one of them, in memory of a young man who had been killed accidentally while hunting, having been erected but a month previously. The

presence of my Christian paddlers from the Yukon mission acted as a very efficient restraint upon the people of Kalkhagamute, who nominally belong to the missionary fold. Nearly all these figures were human, though grotesque and misshapen, and drawn out of proportion. No images of animals or birds, which would have indicated the existence of totems and clans in the tribe, were to be seen; but here and there, over apparently neglected graves, a stick, surmounted by a very rude carving of a fish of the salmon species, could be discovered.

The burial-places of the populous villages of the lower Kuskokwim river abound in these carved monuments, but nowhere could I discover the totem among the emblems, though Mr. E. W. Nelson, of the United States signal service, claims that among the Kaialigamute of the great lake region of the delta he saw totem-posts set up among the dwellings. As the people of the great lakes have always led an isolated existence, having been totally unknown to white men until Mr. Nelson went among them (the whole region having been covered by former map-makers with a mountain chain), it is probable that they have preserved customs which their neighbors have long since discarded; and it is very desirable that some scientific explorer should locate himself for a year or two on the lower Kuskokwim, in order to investigate thoroughly the ethnological features of this highly interesting region.

The Kuskokwigmute resemble in outward appearance their Eskimo neighbors in the north and west, but their complexion is perhaps a little darker. The men are distinguished from those of other tribes by having more hair on their faces; mustaches being quite common, even with youths of from twenty to twenty-five, while in other tribes this hairy appendage does not make its appearance until the age of thirty-five or forty. Their hands and feet are small, but both sexes are muscular and well developed, inclined rather to embonpoint. In their garments the Kuskokwigmute differ but little from their neighbors described above, with the exception of the male upper garment, or parka, which reaches down to the feet, even dragging a little upon the ground, making it necessary to gird it up for the purpose of walking. The female parkas are a little shorter. Both garments are made of the skins of the ground-squirrel, ornamented with pieces of red cloth and bits of tails of the squirrel, as depicted in the accompanying plate. The females wear no head-covering except in the depth of winter, when they pull the hood of their reindeer parka over the head. The men wear caps, made of the skin of the ground-squirrel, resembling in shape the famous Glengarry cap. The young men frequently wear a small band of fur around the head, into which they insert eagle and hawk feathers on festive occasions. The former custom of this tribe, of inserting thin strips of bone or the quills of porcupines through an aperture cut in the septum, seems to have become obsolete, though the slit can still be seen on all grown male individuals. The ears are also universally pierced for the insertion of pendants, but these seem at present to be worn by children only, who discard them as they grow up. In fact, all ornamentation in the shape of beads, shells, etc., seems to be lavished upon their little ones, who toddle about with pendants rattling from ears, nose, and lower lip, and attired in frocks stiff with embroidery of beads or porcupine-quills, while the older girls and boys run almost naked, and the parents are imperfectly protected against cold and weather by a single fur garment.

The use of the true Eskimo kaiak is universal among the Kuskokwigmute, but in the timbered regions on the upper river, in the vicinity of Kalmakovsky, the birch-bark canoe also is quite common. The latter, however, is not used for extended voyages or for hunting, but is reserved chiefly for attending to fish-traps, for the use of women in their berrying and fishing expeditions, and for crossing rivers and streams.

Each of the villages of the tribe has a kashga or council-house, many of them of large dimensions, and in structure closely resembling those already described in the Yukon region and delta. The dwellings also are very similar to those already described; but as we descend the river and pass from forests into the desolate marshes or tundra, the dwellings, owing to scarcity of wood, become more wretched, until they finally appear little more than holes in the ground covered with low mounds of turf. The custom of performing all kinds of labor in the kashga prevails here as among the other tribes, and the same building is used for the celebration of festivals, which are of frequent occurrence among these sociable people; whole villages leaving their homes for two or three weeks to visit their neighbors and assist in dances and masked performances in memory of some deceased person of prominence. During such visits only the sick or the very aged are left behind. The steam baths, so common in all these regions, are also prepared in the kashga, but are indulged in only by the grown-up males.

The accompanying plate represents a beinga-hunter of the lower Kuskokwim and his humble home.

THE TOGIAGAMUTE.—This tribe has not heretofore been distinguished as a subdivision of the Eskimo, having never been visited by white men in their own country until the year 1880. They have remained thus isolated and unknown because their country affords no attraction to the trader in the shape of furs. They possess the general features of their Eskimo neighbors, but the males rarely have any beard until they are quite old. Their dwellings are of the most rude description, the villages resembling those of the prairie-dog on a somewhat enlarged scale. This similarity is increased in the morning, when it is the custom of the men to crouch upon the apex of the low mound of sods, staring about aimlessly into vacancy, wrapped completely in their ground-squirrel parkas. The Togiagamute—who may be divided into people of the coast and those of the interior or lakes—have held no communication with traders, except through the medium of a few individuals of the coast people who were bold enough to visit a small trading-post some distance to the eastward of the mouth of Togiak river. The interior people, or Kassianimute, had never beheld the Caucasian until my visit. Of their domestic life but little could be ascertained, as women and children would fly screaming to hide in the tall grass of the tundra at first sight of the





BELEGÀ HUNTER AND DWELLING - LOWER KUSKOKWIM ALASKA

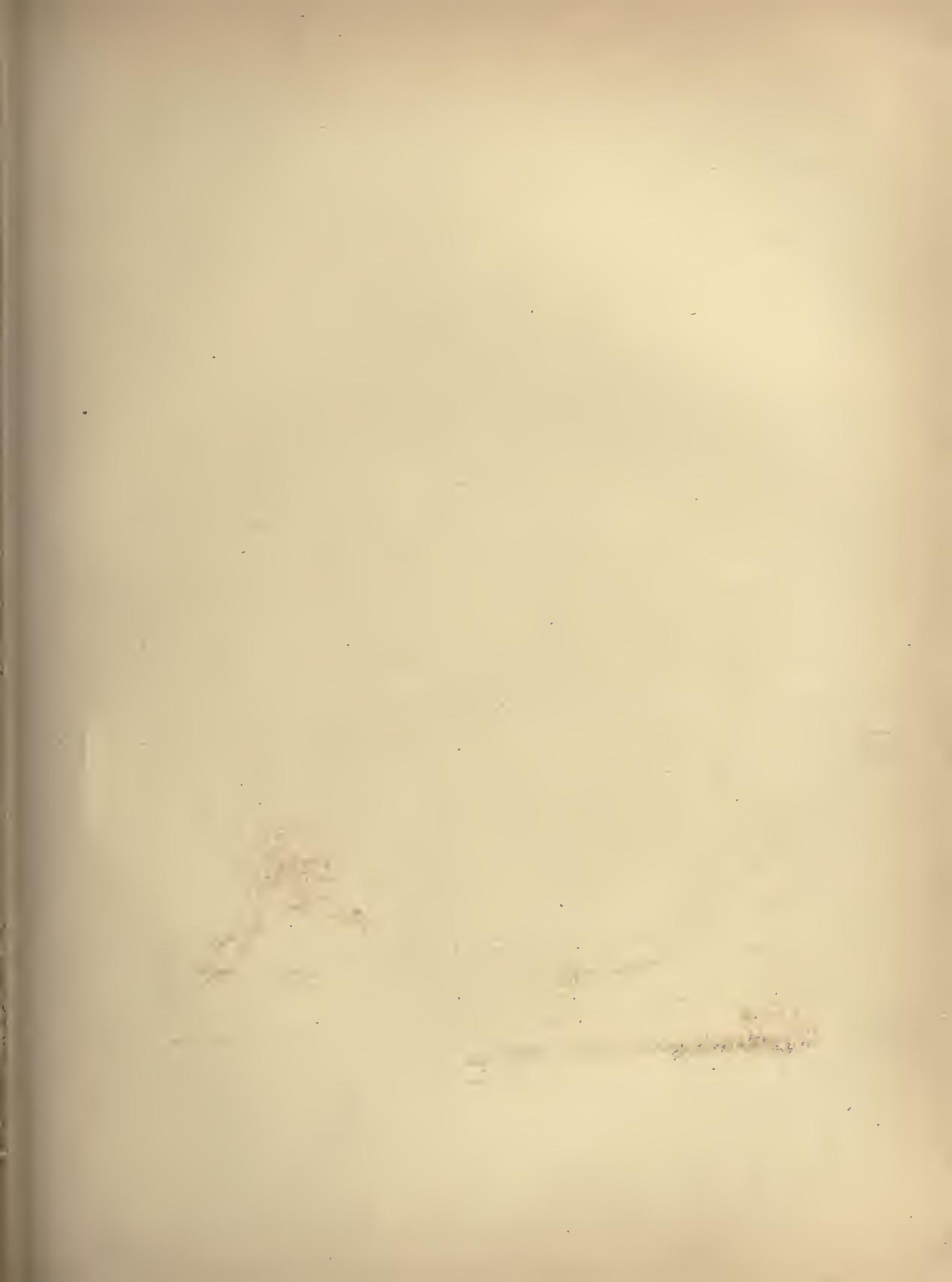


PLATE IV



A. Moon & Co. Lith. Baltimore

BURIAL PLACE OF TOGIAGAMUTE

visitor, who was at first a truant traveler and his case poor glass, writing materials, etc., were left. An absence of the laborer images of fish and the brush he was wandering from place to place upon its side, supported by a families rest in the lee of the protection. Among the natives who acts as spokesman, to the perfect state of mind of the families and groups of friends or perhaps forming one or longer observation farther and thousand of miles beyond down for a time.

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visitor, who was at once surrounded by a crowd of astonished and inquisitive males, nearly everything on and about the traveler and his canoe possessing the greatest interest for them, and loose articles, such as a compass and field-glass, writing materials, etc., were passed around from hand to hand and closely inspected, but safely returned at last. An absence of the elaborate carvings found among the Kuskokvagmutes is very noticeable here; the crudest images of fish and the human head and face being all they possess in this line. They lead a thoroughly nomadic life, wandering from place to place in search of game or fish, having no shelter beyond that afforded by a kaiak turned upon its side, supported by a paddle or two. This simple screen is shifted about as the wind changes, and whole families rest in the lee of this unsatisfactory shelter in pelting rain-storms, with only their heads enjoying the least protection. Among the Eskimo tribes heretofore described the traveler generally finds some one in each village who acts as spokesman, though not possessing any real authority, but the Togiagamites seem to live in the most perfect state of independence of each other. Even the communities do not seem bound together in any way; families and groups of families constantly changing their abode, leaving one community and joining another, or perhaps forming one of their own. The youth, as soon as he is able to build a kaiak and to support himself, no longer observes any family ties, but goes where his fancy takes him, frequently roaming about with his kaiak for thousands of miles before another fancy calls him to take a wife, to excavate a miserable dwelling, and to settle down for a time.

A branch of this tribe occupies a few villages in a peninsula formed by cape Newenham. These differ much in their habits and customs from their immediate neighbors, owing to the fact that large droves of reindeer still roam over the mountains of the peninsula, the hunting of which seems to be a monopoly of these natives, whom we may distinguish as the Chingiginnute or Cape people, and whose principal settlement is Azivigiak. The Chingigumute have been in contact with both Russians and neighboring tribes, as a portage route from the Kuskokvim to Togiak bay leads through their country; consequently they do not differ much in their customs from the Kuskokvagmutes, though their dialect is that of the Togiagamite. There is one peculiarity of the people just described which they have in common with the inhabitants of the lower Kuskokvim. I refer to the surprising indifference in regard to the quality of their drinking-water, as they drink the water of brackish lagoons, full of offal of fish, seal, etc., even in localities where running water of better quality is quite convenient. The hunters who proceed to sea in their kaiaks in pursuit of the seal or of the beluga take with them only a dipper, and quench their thirst with salt water. I had occasion to observe this peculiar custom even when I had with me a supply of fresh water, of which these natives might have partaken.

The accompanying plate represents a burial-place near the mouth of the Togiak river.

THE NUSHEGAGMUTE.—The Nushegagmutes, also known as Kiataginute, are confined strictly to the valleys drained by the Nushegak river and its tributaries. In outward appearance they resemble their neighbors already described, but their manners and customs have been somewhat changed by long contact with the Russians and the location of the missionary station at Alexandrovsk, on the mouth of the river. The men are hunters of considerable skill on both land and water. The natives inhabiting the headwaters of the river and the lake region of the interior are in constant communication with the Athabaskan tribes. All the natives of this tribe are carried on the register of the Russian missionary, and consequently are nominally Christians, although still addicted to their old pagan customs and festivals. During a favorable season the outlying settlements receive an annual visit from the missionary, whose influence does not extend much beyond the baptizing of infants and the marriage of such couples as visit the mission station. The interior of this region being generally wooded, the dwellings of natives are somewhat larger and more comfortable than those of the coast people. The inhabitants of the immediate vicinity of Alexandrovsk and the sea-coast have been strangely mixed by immigration from the westward and northward, and we find here families from the Kuskokvim, from the Yukon delta, and even from Norton sound, the latter of the Mahlemute tribe. Many of these strangers are engaged in walrus-hunting along the shallow coast and about the outlying islands. Here, as on the Kuskokvim, the natives within the reach of tide-water use the Eskimo kaiak exclusively, while those of the interior have birch-bark canoes. The men are all skillful carvers in ivory, and both males and females take part in the scenic performances connected with their many festivals. The kashga, or kashima (the latter a Russian term), is found in every village, and is used as workshop, bath, and assembly-room alternately.

Great care and pains are bestowed upon their masks and scenic representations by these natives, as well as by the neighboring tribes. The actors in the scenes represented always array themselves in their costumes and masks out of sight of the spectators, generally in that part of the kashga partially covered by the flooring, ascending through the fire-hole like actors from a trap in the stage. A change in the action is generally accomplished behind skins held up as a screen, and every participant in the performance does his utmost to act his part as true to nature as possible. During representations of combats between men, and between men and animals, bladders filled with seal's blood are concealed about the person in order to give a realistic representation of the flowing blood. Stuffed animals introduced on such occasions are generally moved about quite naturally by hidden strings and cords, and carved birds flap their wings through the same agency. The majority of the masks have movable eyes and jaws. In fact, these performances afford a striking contrast to the dramatic scenes enacted by the Chinese, who boast of the oldest civilization of the globe. A learned Chinaman, with the red button on his cap, the proof

of having passed the most difficult examinations, will stand in the auditorium of a Chinese theater crowded to suffocation, through a five or six hours' performance on the board stage, where everything in the way of scenery consists of a few dry-goods boxes and a stool or two; where changes of scenery are denoted by placing a small flower-pot on one of the dry-goods boxes to represent a garden, and placing an inkstand to indicate an office or a court-room; where a criminal about to be executed is touched with a paper sword on the side of his neck, and walks demurely off the stage in full sight of the audience; where a man about to be murdered walks out and brings in a miserable dummy and holds it up to be slain in his place; while among these savage tribes every detail pertaining to their representations is attended to with patience and care, exceeding even those bestowed upon such matters on our provincial stages.

THE AGLEMUTE.—This tribe, numbering but a few hundreds, inhabits the north coast of Alaska peninsula, down to the Oogashik river, where the Aleutian settlements begin. The Aglemute also are Christians, but, like their neighbors, retain all their former customs and superstitions. Their villages are all located on the sea-coast, with the exception of one at the head of lake Walker. The natives of the coast villages are walrus-hunters, and occasionally put out to sea in pursuit of whales. They are equally skilled in ivory carving with their northern neighbors, the difference between them being almost purely dialectic. The latter circumstance is probably owing to the fact that the Aglemute have lived from time immemorial upon the portage routes between Bering sea and the north Pacific, across the Alaska peninsula. The people of the easternmost villages on lake Walker even now maintain a more constant communication with the Kaniagmutes of Katmai across the mountains than they do with their kinsmen on the coast of Bering sea. Among the Aglemute also traces of immigration from distant tribes exist. I found on the Naknek river, the outlet of lake Walker, a family hailing from Ikognute, some 200 or 300 miles up the Yukon. Their immigration had taken place quite recently, and they still remembered many of the people in their old home by name. In former times there existed another element among the Aglemute—Aleutian invaders, who for some time inhabited two settlements on the mouth of the Naknek river. As far as can be ascertained, the Aleutians retreated down the peninsula as far as Oogashik at the beginning of the present century. In their garments the Aglemute do not essentially differ from their western and northern neighbors, though they make use of reindeer-skins for their winter garments, these animals being quite plentiful in their country.

THE KANIAGMUTE.—Crossing the mountains from the country of the Aglemute, we enter the territory inhabited by the most important among the Eskimo tribes of Alaska, the Kaniagmutes (Koniagmutes or Kadiaktzi of the Russians, Kikhtgmute of the Aglemute, or the Ultz-ehna of the Athabaskans of Cook's inlet). The Kauigmutes were the first Eskimo tribe with whom the Russians came in contact, and their first meeting was not of a friendly nature. Before the Muscovite traders had become more intimately acquainted with this tribe they classed them as Aleuts, on the strength of their outward resemblance to the latter, and such they were called as long as the country remained under Russian rule, though scientific men knew long ago that the Aleut belonged to a different tribe from this. Our earliest knowledge of the Kaniagmutes is based upon the reports of Golovief, the Russian, who landed on Kadiak in the year 1762, and of Shelikhof, who established the first permanent settlement on the island. The latter, whose personal investigations among the people extended over two years of residence, in narrating the events of his voyage, wrote as follows:

The Kaniags (Kadiak people) are tall, healthy, and strong, generally round-faced, with light brown color; the hair is black, seldom dark brown, and is cut off around by men and women. The wives of some of the more prominent natives comb a bunch of their hair forward over the forehead and cut it off at the eyebrows. A few of the men have beards, and both sexes frequently tattoo the breast and shoulders in imitation of neckerchiefs. Men, women, and young girls pierce the partition of the nose as well as the ears and under lip; the latter disfigurement often assumes the size and shape of a second mouth. Through the hole in the nose a small stick or bone is worn, and bead ornaments are placed in the ears, mouth, and nose. The men do not cut their hair. They have no shoes, going always barefooted, and at home entirely naked, with the exception of a small apron of skin. They wear parkas of the skins of beaver, otter, fox, bear, birds, ground-squirrels, marmot, marten, rabbit, reindeer, wolverine, and lynx. Their rain garments are made of the entrails of sea-lions, seals, and whales. On their heads they wore hats made of spruce-roots and grass, also wooden caps, bent or curved, of one piece.

In the chase of marine animals they used spears that were thrown from little boards, but in war times they used bows and arrows and lances, with points of iron, copper, bone, or stone. They have iron hatchets of peculiar shape, also pipes, knives of iron and bone, iron needles (until our arrival the women made their own needles of bone); thread made of sinews, dishes made of wood, of the horn of mountain sheep, of clay, and stone. Their boats were hide-covered with skins. They catch fish at sea with bone hooks, the lines being very long and made of dried sea-weed, the seam of one kind of sea-weed being sometimes 40 fathoms long. In the rivers they catch their fish by means of weirs and dams, killing them with spears. They make fire by friction, and use stone lamps for lighting filled with the fat of seals, bears, or sea-lions, and provided with wicks of grass.

Of their marriages I know nothing, nor can I say anything of their now-born children, except where the name is given from the first object in view, be it animal, bird, or anything else.

The burial customs differ in the various tribes of the Kaniag. I have not witnessed these ceremonies, but I have been assured that some deposit the corpse, together with the most valuable possessions of the deceased, in a small canoe, and cover it with earth; others later at the same time with the deceased a live slave. The Kenaigo (Kouaitze), however, burn the corpse, together with a number of skins presented by relatives for the purpose.

During the mourning for their dead relatives they cut the hair of the head and smear the face with black pigment; this they do only for relatives such as father, mother, brother, sister, and others especially beloved; sometimes also if a stranger for whom they have felt great friendship. If the deceased has been in bad repute or quarreled with his relatives, the latter do not go into mourning.

Epidemic diseases I did not notice among them; they did not know anything of small-pox; they are of healthful habit, and live to a hundred years.

These natives go to meet arriving visitors dressed in their best and painted red, beating drums and dancing to the time with arms in their hands; the visitors approach in order of battle. As soon as the canoes are near enough the host and hostess wade into the sea up to their breasts and drag the canoes ashore as rapidly as possible; then they hurriedly assist the guests out of the bidarkas and carry them singly on their backs to the place appointed for their reception; here they all seat themselves, but perfect silence reigns until everybody has eaten and drunk his fill.

The first and most important ceremony consists in partaking of cold water, and then the children and youths bring on the various dishes, consisting of blubber, a hash made of fish, seal, whale, and sea-lion meat and blubber; the next, berries of various kinds served with oil; then roots mixed with berries and dried fish, and finally meat of animals and birds. Salt is unknown to them. Of every article of food the host must taste first. This made me believe that they had a knowledge of poison. When the host has tasted from a dish he hands it to the guest at his right; he helps himself and then passes the dish in the order of rank. If anything remains on a dish it is passed back to the first, who gathers the remnants and puts them by to take with him on his departure. The meal finished, conversation begins, and when all the news has been exchanged dancing and singing are indulged in to the music of drums and rattles. Some don masks of grotesque patterns made of wood and painted. When the guests are dressed they are carried by the host to a large hut; this building resembles somewhat a temple of irregular and barbarous architecture. Here the real entertainment begins; as long as the guests remain singing and dancing and pantomime are continued; when tired they go to sleep, but when they awake the entertainment goes on, ending only with the termination of the visit. On taking leave both parties make presents to each other, and perhaps do a little trading. In these large buildings all of the councils, consultations, and assemblies are held; and whenever anything of importance is going on the female sex is excluded.

[The Kaniags and Chugach have one language, but the Kenaige are entirely different in both language and customs.] The people live in subterranean dwellings, the walls of which are lined with planks; the window-openings are on top, covered with bladders of various animals; the entrance is from beneath. They have no fire-places, and make no fire because it is warm enough without. Their bath-houses are similarly constructed, and heat is produced with stone heated in a fire outside; here the natives rub themselves with bundles of grass and twigs. These baths are very hot, but no steam is used. Each settlement has a common kitchen with doors or openings all around. Whoever steals most frequently and successfully is most respected. They do not have many wives—seldom a man has two, but the good-looking and active women sometimes keep two and three men without any appearance of jealousy among them.

They have no vehicle on land and no draught-animal, and though dogs are numerous they are not employed for this purpose.

They have not the slightest conception of a God, and though they say that two beings or spirits exist in the world—one good and one bad—they have no imago or likeness of the same, and do not worship them. They are not idolators. Of the beings or spirits mentioned above they know nothing beyond the fact that the good spirit taught them to use biders, taught them to make biders; and the bad spirit how to spoil and destroy them. From this fact we can judge of the narrow limits of their understanding. They have, however, a great deal of sorcery and soothsaying among them; they have no law of justice, and everything tends to show that they lead a life differing but little from that of beasts. They are of an ardent nature, especially the females. They are enterprising and cunning by nature, and when insulted they are revengeful and malicious, though meek and humble in outward appearance. Of their faithfulness and honesty I can say but little, owing to my brief residence among them. I have seen examples of good faith and firmness, but also of the contrary. If they are told that they may derive profit from a certain undertaking they spare no pains and dare anything. Altogether they are a happy and harmless people, as is proved by their daily gaieties and frolics; but as they live in constant enjoyment, and neglect their domestic affairs, it frequently happens that they suffer from want of food and clothing.

In ancient times the Kaniagmutes settlements extended much farther both north and south than they do now. They carried on constant wars with the Aleutians of the Shumagin and Aleutian chains of islands, and in the north were found by Captain Cook half-way up Cook's inlet as late as 1778. In warlike disposition, strength of body, and treachery they appeared to the Russians very different indeed from the meek and humble Aleuts, but, once conquered, they became fully as manageable and as easily accepted the teachings of the Russian missionaries, who began their labors among them in 1795. The intermixture of Caucasian and other elements in this district has been so great as to leave but few of the original tribal peculiarities either in outward appearance or in manners and customs. The Kaniagmutes and their eastern neighbors, the Chugachimutes, are the only sea-otter hunters among the Eskimo of Alaska, and as such naturally become of greater importance to the Russians than their western neighbors, receiving a greater share of attention in every way. The manners and customs of the Kaniagmutes have been repeatedly described since the days of Shelikhof. First after him came Davidof, a young officer of the Russian navy, who resided two winters on Kadiak island, in 1802-'03. They were next described by J. H. Holmberg, an ethnologist of some repute from Finland, who embodied much of Davidof's work in his own, which was published about the year 1850. Other Russian and German writers have touched upon the subject. The substance of these previous investigations, together with my own personal observations, are embodied in the following pages.

The Kaniags (Koniag, or Kikhtgmute) are the inhabitants of the island of Kadiak and surrounding islands. They were called Kadiak-Aleuts by the Russians, or briefly Kadiaks. Neither of these two appellations is strictly correct, as originally neither island nor people bore such a name. The name of Kadiak is evidently a corruption of Kikkitak, a word signifying in the language of the Kaniagmutes a great island, and which was naturally applied to the largest island of the group. What may have induced the Russians to call the Kaniags Aleuts, a name first applied to the inhabitants of the Fox islands, different entirely in language as well as in outward appearance from the former, is not easily explained, unless it was based upon the general similarity of outline existing among the natives of the northwest coast of America. In the course of time the name of Kadiak has been universally adopted even by the natives of the island, while the younger generation call themselves Aleut, which they pronounce Aleutik; only the aged still maintain that in the days of their liberty and independence their name was Koniag. We find in the Kaniags a people divided originally into commoners and hereditary chiefs. Among the Thlinket the commander or head man, who was much respected, was chosen among the families of chiefs. Under Russian rule this social organization had almost disappeared, but the chiefs or elders (*starshina*) were selected by the

Russian-American Company on account of their influence or wealth, and the company also took care to make these selections from families in which chieftainship had been hereditary. They received a salary from the company, and if they held their office for a prolonged period they were presented with a long tunic made of scarlet cloth. A starshina (or elder) dressed in this manner enjoyed among his people a greater respect than is accorded to European nobles with hundreds of ancestors.

The system of slavery was less developed among the Kaniags than among the Thlinket. They held slaves, but their number was small, and the wealth of individuals did not depend upon slaves entirely, as among the Thlinket. The sacrifice of slaves was unknown; they were looked upon only as laborers or servants, and their lot was a happier one than that of their Thlinket neighbors. Of prisoners of war only the women and children were carried into slavery; the men (according to the doubtful authority of Davidof) were killed at once, or perhaps preserved for some great festival, to be tortured in view of the whole settlement. The few who survived such torture were permitted to live. The principal mode of obtaining slaves was by barter with the other tribes; but no slaves have existed on the Kadiak group of islands for at least a generation. As soon as Shelikhof established himself at Kadiak the slaves began to flock into the Russian camp, where they found protection, and in return served as body-guard and scouts for the Russian traders. Later, when the Russians had become firmly established, they confiscated all the slaves and employed them as laborers of the company; at the same time the very name of slave seems to have disappeared, and they were designated by a word imported from Kamchatka, the "kayoor," which signifies day-laborer or servant. In course of time, when the original kayoors had decreased much in numbers, the company made a practice of replacing them with free natives who had committed crimes. It seems that the number of crimes committed always increased with the demand for labor, and finally the system of universal liability to labor for the company was adopted, from which even children and women were not excepted. In outward appearance a few characteristics distinguish the Kaniag from other tribes of the northwest coast of America. The posterior portion of his skull is decidedly flat, and his stature is considerably above the medium, making him the tallest among his neighbors. Occasionally individuals of gigantic stature are met with; for instance, Davidof claimed to have met with a chief in the bay of Igak who measured 6 feet and 9 inches in height. The dark or nearly copper color of the face or skin is considered by Davidof as not natural, but the consequence of a life of constant exposure; and at the same time he remarks that he saw many white females. The same observation was made fifty years later by Holmberg, but the white faces always appeared to him to be the result of mixture with foreign blood. The coarse black hair, the small black eyes, protruding cheek-bones, and brilliant white teeth are common to all the tribes of the Russian colonies. In former times both sexes wore their hair long, the men's in plaits and the women's in a rough knot or roll on the top of the head and cut straight on the forehead just above the eyes. On festive occasions it was smeared with whale-oil and a red powder made of burnt ochre, and finally strewn with white down, generally taken from the eagle. Of all these modes of ornamenting the hair, oiling alone has been retained, and nearly all the men, women, and children dress it in European fashion. The partition of the nose, the lower lip, and the external rim of the ear were pierced for the reception of ornaments, of which the one destined for the nose always consisted of a cylindrical pin of bone, five inches in length, sometimes replaced with the sea-lion whiskers. In lips and ears the ornaments or pendants consisted of small pieces of polished bone generally pierced and strung upon threads, but after the arrival of the Russians glass beads took the place of these. At the beginning of this century the lip and ear ornaments of the wealthy Kaniag women or a young dandy frequently weighed several pounds.

The dentalium was an ornament much prized by men and women. This shell did not exist in the Russian possessions, but was imported from the British colonies north of the Columbia river, and thence passed from hand to hand along the whole coast as far as the Aleutian islands. At the time of Davidof's visit to Kadiak, in the year 1802, the price of one pair of these little shells was a whole parka of squirrel-skins.

Davidof also relates a tradition of the Kaniags to the effect that in the country of the Thlinket, far to the southward, there was a lake from which the dentalium or hyqua shell was obtained, the mollusks being fed with bodies of slaves thrown into the water—a story evidently invented by the Thlinket to enhance the price of this commodity, of which they had a monopoly.

The most precious ornaments consisted of small pieces of amber that were washed up occasionally by the sea on the south coast of Kadiak, but chiefly on the island of Ooakamak; these were pierced and strung and served the women as earrings or pendants. At certain times, after an earthquake, as a rule, the ocean seemed to be more lavish in bestowing this treasure, and then the amber formed quite an article of trade between the Kaniags and the people of Bristol bay and Nushegak; but as these larger harvests of amber only occurred at long intervals the value of the article always remained at a high standard.

The lower lip of the women was always pierced twice, but frequently five or six times; the men having only one such orifice. Some dandy in ancient times originated the fashion of making a long, horizontal slit in the under lip parallel with the mouth, but this mode had few followers, owing to the inconvenience of having their food come out at the artificial aperture.

At present only the oldest women of Kadiak island show traces of tattooing on the chin, though formerly this custom was universal. The mode of procedure was to smear a thin thread of whale sinew with a mixture of

soot and oil, and then to draw the thread into the skin by means of a needle, thus forming certain primitive patterns. In ancient times the breasts were also tattooed, and frequently two parallel lines were drawn from the ear to the chin; and if a newly-married woman wished to give her husband a proof of great love she tattooed herself on various parts of the body and in the hands.

It was the custom of the Kaniags to paint their faces in various colors before festivities or games and before any important undertaking, such as the crossing of a wide strait or arm of the sea, the sea-otter chase, etc. The colors most commonly used were red and black, the pigments consisting of oxide of iron and graphite, which are found on various parts of the coast, mixed with whale- or seal-oil and applied with pointed sticks. After the face had been covered with one color the sticks served to scratch in the still moist foundation figures and stripes, which were either filled with other colors or allowed to retain the natural color.

In former times the clothing of both male and female Kaniags was alike, and consisted of the kamleika and the parka. Both of these names were introduced from Kamchatka; the native word for "kamleika" being *kankhlinku*, and for the parka *atkuku*. The parka was a long shirt or garment with a small opening at the neck just large enough to allow the head to pass through, and with two short sleeves, which were intended more for ornament than for use, as under each sleeve there was a vertical slit through which the arms were thrust when needed, but commonly these members were kept concealed under the garment. The parka was made of the skins of birds or animals; of the former the cormorant, the duck, and the sea-parrot furnished the material, and of the latter those of the ground-squirrel, the sea-otter, the marmot, the bear, and the reindeer were used. After the birds had been skinned the women removed the fatty particles by sucking, and then smeared them thickly with putrefied fish-roe and let them remain in this shape for some time. After a few days they were cleaned and kneaded with hands and feet until dry. The skins thus prepared were sewed together with needles manufactured from the bones of small birds, and thread prepared by a very tedious process from the dried sinews of the whale. The most valuable of all the bird-skin parkas were those prepared altogether of the necks of the cormorant, worn only by the young women, and a single garment required the necks of from 150 to 200 birds. The feathers of these garments were worn on the outside, and were ornamented with the long hair of the reindeer, strips of ermine, sea-otter, and sometimes with eagle-feathers. Other bird-skin parkas were worn during fine weather with the feathers inside, and in wet weather these were turned out and served to shed the water. The skin was ornamented with figures and lines in various patterns traced in red pigments.

The ground-squirrel, or *spermophilus*, furnished the material most generally used for parkas. The animal does not exist on the island of Kadiak, but abounds on some of the smaller islands. The skins were first cut into squares and then sewed together so that the head and belly formed one side and the back and pendant tail the other; these double squares being then sewed together to make the parka, which consequently had fur both inside and out. The parkas made of bear-, moose-, sea-otter-, or reindeer-skin were always worn with the fur outside. The marmot-skins were obtained by barter from the Kenaitze and Chugach; the reindeer-skins from the inhabitants of the Aliaska peninsula, and exchanged for sea-otter skins or amber, etc. Reindeer parkas were always ornamented with feathers, beads, etc.

The kamleika is the most important article of clothing worn by the Kaniags, as it protects them against rain and moisture, and without it it would be impossible to undertake any extended voyages in bidarkas. It is made from the entrails of bears, sea-lions, or seals, occasionally also of those of the sea-otter. These are dried, cut into long strips, and sewed together into shirts with wide sleeves, and a hood which is drawn over the head until only a portion of the face remains bare. The entrails are prepared in the following manner: They are first turned inside out and all the fatty particles removed with a sharp fragment of a shell; then they are repeatedly washed in salt water or urine, and rinsed and allowed to dry slowly; when dry they are rubbed between the hands until perfectly soft, and then are cut into strips and sewed together. When one of these garments is completed the sleeves and neck are tightly bound and water is poured into the body in order to test its imperviousness. The kamleikas made of the entrails of the bear are considered the strongest, but the material is less plentiful than that obtained from sea-lions or seals. Lieutenant Davidoff states that in ancient times the skins of the tongue and the liver of the whale were also used for the same purpose.

The garments of the Kaniags as they have been described may still be found among them. The squirrel and bird parkas and kamleikas are still universally worn, but they are now ornamented with red worsted and strips of cloth. When the Russians had obtained a firm foothold in these regions they prohibited the natives from wearing garments made of sea-otter, bear, or other valuable furs. At present the parka is worn only out of doors, while indoor shirts of cotton, dresses of calico and drill, and trousers of coarse cloth or linen are in common use; hats, and caps of American manufacture have almost superseded the hat plaited of roots and highly ornamented with beads, dentalium, sea-lion whiskers, and figures in black, red, and blue colors. A blue color, consisting of small fragments of ore which are ground to powder, is obtained by barter with the inhabitants of the Aliaska peninsula. In applying these pigments it was the custom to open a blood-vessel of the nose with a sharp piece of shell and to mix the color with the blood to the proper consistency, the Kaniags claiming that such a mixture was more durable than colors prepared with oil. In painting paddles or oars this method was generally adopted; if the bleeding did not cease speedily the end was sprinkled with ashes. In ancient times the hat was ornamented with

an elaborate piece of embroidery, the work of the women—sometimes representing a bush with birds; but this has entirely disappeared. Before the arrival of the Russians the inhabitants of Kadiak were barefooted, but they soon adopted the *torbassá* (boots of seal- or deer-skin), imported by the Russians from Kamchatka.

In his choice of food the Kaniag is still less particular than the Thlinket, and in addition to the articles composing the diet of the latter he consumes a number of disgusting and nuclean things that no other tribe would look upon as food. As a sample of this I instance the fact that after killing a bear they empty the stomach and entrails of their contents and boil them with berries; this is done chiefly at a season when the bear also lives upon berries. This disgusting habit cannot be traced to necessity, as food of all kinds abounds at that time of the year. It may be stated briefly, but truly, that the Kaniagmutes eats anything and everything from the toughest root to the most disgusting worm of land or sea.

The principal means of subsistence, however, is fish. During the summer season it is generally cooked before being eaten, but during the winter the air-dried fish is eaten raw more frequently than cooked. The drying of the fish is done in the open air, and nothing hinders flies and other insects from depositing their eggs therein, which speedily develop into maggots.

The dried fish is generally stored in the dwellings, being piled up along the walls; but if the supply is great it frequently happens that the floor is covered with them several feet high, and the family live on the top of their food until they gradually eat their way to the floor. Among the greatest delicacies of the Kaniag are the meat and blubber of the whale; no other article of food, be it fish or flesh, seems palatable to him without being dipped into oil, and if the supply is ample he drinks the latter pure. The capture of the whale always marks an epoch in the season, people hastening from distant settlements to assist in cutting up the animal. It is the custom to present such assistants with one-quarter of the whole animal, and consequently there are but few idlers, and the operation is concluded with astonishing rapidity. On the island of Afognak Holmberg witnessed the cutting up of a whale, and testified to the fact that in two hours nothing but the bare bones remained on the beach. The blubber as well as the meat is cut into long, narrow strips; the meat is boiled, but is seldom consumed fresh, being deposited in excavations in the ground, where it undergoes a process of putrefaction, and where, according to a Russian expression, it "becomes sour", before it is considered fit to eat. The blubber was formerly reduced to oil in the following manner: It was first cut up into very small pieces, then the old men and women and children who could not assist in the cutting masticated the fragments and spit out the juice into a large dish or kettle; subsequently this liquid was boiled and preserved for future use. Frequently the blubber is mixed with berries or with the boiled roots of the wild garlic, and put up in bladders for the winter.

It frequently happens that a long time elapses between the killing of a whale and the capture of the carcass, and under such circumstances the consumption of the meat causes disease and sometimes death. The Kaniags, however, claim to be able to decide whether the meat is still fit to eat by observing the gulls and other aquatic birds that swarm about the carcass; and if a certain species of bird is absent the Kaniag will not touch the meat.

A variety of wild celery (*cicuta*) also forms a favorite article of diet with the Kaniags; the outside of the stalk being removed with the teeth and the soft pulp inside eaten. Lieutenant Davidof also stated that the roots of certain ferns were preserved in oil and eaten.

In cases of necessity the Kaniags are able to go without food for a long time, and they never load their stomachs before exertion of any kind. After labor has been performed they give full sway to their gluttony, and their voracity borders upon the marvelous. The following incident, related by Holmberg, may serve as an example:

While circumnavigating the island of Kadiak in a bidarka I was compelled by bad weather to remain in Killuda bay for three days with my six oarsmen, and occupied the house of a native who was engaged in fishing; the only occupation of my men at that time was to eat and to sleep. Before sunrise in the morning a kettle of "yinkala" was on the fire, and each man devoured two fish; early in the forenoon our host gave another fish to each of the men; this was eaten raw with whale-oil; at noon a supply of fresh salmon was brought in, and sixteen of these were boiled and eaten by my crew; in the evening the morning meal was repeated, so that during daylight each man had devoured at least seven fish, and what they consumed during the night I could only surmise.

After returning to Pavlovsk harbor Holmberg related the incident to Mr. Murgin, the agent at that place, somewhat apprehensive of being disbelieved, but his story was received only with hearty laughter, and in return he was favored with a similar anecdote which threw his experience altogether in the shade. Mr. Murgin, during a bidarka journey encamped upon an island late in the evening, and immediately after landing an immense bear was killed by his men. Murgin went to sleep, and, after resting six hours, he was asked to embark again. Seeing no sign of the bear about the camp he asked what had become of it; the reply was, "We have eaten him up." Six men had devoured the huge bear within a single night. I myself, also, witnessed the devouring of two 50-pound halibut by six men between 10 a. m. and 6 p. m., while delayed by bad weather on Kadiak island.

As already mentioned, mussels are a favorite article of food with the Kaniags, but it seems that these also are poisonous in certain localities or at certain seasons. One instance is on record where a large number of sea-otter hunters perished from eating mussels in what is now called Peril strait, in the vicinity of Sitka. An old man named Arsenti, who was present at the time, gave Holmberg the following account of the disaster:

Soon after the new fort had been built at Sitka I was one of a sea-otter party which had been ordered to winter in Sitka, but when they arrived there Medvednikov, the commander, informed us that he had provisions only for half the party, and that the other half must

return to Kadiak; I was among those who returned. When we passed through the straits we had no fish and were compelled to eat mussels, and a few hours later more than one-half of our men were dead. Death took hold of me also, but I remembered the advice of my father to eat raw sticklebacks; I did so, vomited, and was cured.

Previous to their acquaintance with the Russians the Kaniags undertook to make an intoxicating beverage by distilling alcohol from the fermented juice of raspberries and whortleberries, but this was prohibited by the Russian company. Now they all know how to distill alcohol from flour, sugar, and molasses. The use of tobacco has become universal, especially in the shape of snuff; and among other articles of luxury tea and sugar are the most important.

Holmberg expressed his astonishment when he arrived at a Kadiak settlement and learned that the inhabitants numbered from 200 to 300 and lived in only 10 or 15 dwellings; but when he entered one of these houses and beheld the crowded mass of old and young, the matter was easily explained. Each hut was inhabited by three or four or more families; the interior consisting of one common apartment, or cooking- or living-room, and three or four small partitions to form sleeping-rooms. The walls consisted of planks planted perpendicularly in the ground, slightly inclined inward. The rafters generally consisted of whale-ribs, which were covered with sticks of drift-wood, and a thick layer of sods placed over all. The floor was strewn with dried grasses, and in the middle of it was the fire-place, corresponding to an opening in the roof. Along the walls all the provisions and utensils were piled promiscuously; and all kinds of offal with a penetrating odor of whale-oil made the interior exceedingly disagreeable.

The sleeping compartments are generally so low that one cannot stand upright within; they are lighted up sometimes by a small bladder window in the roof. Small as these compartments are they serve as sleeping-rooms for several families to stretch out promiscuously upon the plank floor without covering of any kind. One of these little compartments is used as a steam-bath room, for which steam and heat are obtained by means of red-hot stones, over which water is poured; and after the Kaniag has been thoroughly steamed he runs into the sea or river to wash himself, in winter as well as in summer.

The Kaniag canoes are remarkable for fine workmanship and graceful form. They consist of a slight frame of light wood tied together with whale-sinews and covered with seal-skin, with the exception of an opening for the oarsmen, and are made with one, two, or three openings. Each kind has a different name, but are all known as kaiaks. The three-hatch kaiak is called the bidarka (*paitalik*); the two-hatch canoe is called *kaiakhpak* (big canoe), and the one-hatch canoe, *kaiangrak*. The two-hatch canoes are most generally used at Kadiak. Over each hatch a water-proof apron is fastened (called by the Russians *obtiashka* and by the natives *akvilivak*), which the inmate draws up to his arm-pits in bad weather, securing it tightly about his chest. The Kadiak bidarkas differ in form from those of other coast tribes, being shorter and broader than those of the Aleuts, and the paddles have but one blade. In addition to these canoes they have so-called "bidars" (*angiak*), much larger and of different grade. The frame-work for these is constructed similarly to that of the canoe, but is not covered on top, and resembles our boats in shape. They were formerly used principally in times of war and for long journeys, as they hold easily from 30 to 40 persons. Oars are used to propel them, and sometimes masts and sails. At present nearly all of these crafts are in the hands of the traders.

The Kaniags are possessed of great skill in carving figures and other objects from walrus-tusks, the material being obtained from the Alaska peninsula. They also make very nicely carved snuff-boxes of whalebone. Formerly all these objects were worked with stone implements, but the use of iron has long been known to the Kaniags, who used it at the arrival of the Russians. The savages said that iron was occasionally cast upon the beach by the waves [*sic!*]. The stone implements consisted of hammering-wedges and axes made of hard graywacke, knives made of a hard kind of stone, similar in shape, and provided with wooden handles; and tools made of shells served to smooth or polish surfaces. We still find on Kadiak many stone lamps manufactured in ancient times, and roughly fashioned by partially scooping out a piece of large stone. Oil was poured into this excavation, and twisted moss and grass served as wick.

The women are equally skilled in handiwork, especially in all kinds of needlework, making and adorning garments, covering the canoes, etc. They also make bags of the entrails of seals and whales, and ornament them with feathers and beads of worsted. These bags are water-proof, and protect their contents against moisture. The Kaniag women also make baskets and hats, but do not equal the Thlinket women in this respect; they excel, however, in all kinds of embroidery.

The general mode of life of the Kaniags in former times much resembled that of all the coast tribes of northwest America. In the summer they occupied themselves with the chase and the fishery, and the winter was spent in idleness until hunger compelled them to renew their efforts. In former times all the great festivals consisted of gambling, dancing, and feasting in the winter, but the custom has become nearly obsolete. At the beginning of this century Lieutenant Davidof witnessed such festivals.

The sea about Kadiak island is exceedingly rich in fish, the most prominent among them being the salmon, of which six species are distinguished: the red-fish, the kishuteh, the gorbusha, the chavieha, the khaiks, and the goletz, or salmon-trout. Each of these species throng the bays and streams at certain seasons of the year, and are easily secured with spears. The natives know so well the time at which each stream or river is visited by

certain species of salmon that they rarely make a mistake of a day in their calculations, generally shifting their quarters to such localities just in time for the proposed catch. Of late they have begun to use seines made of whale-sinews. Halibut and codfish are caught with hooks similar to those of the Thlinket.

Their arms and implements consist of arrows and spears, the former propelled with bows and the latter from a board. All these articles are made of the wood of the spruce and the Douglas pine, the latter being quite common among the drift-wood. The bow is about 4 feet long and has a string of whale-sinew. The spear-board is about 18 inches long and serves to give an impetus to the spear in throwing it. I noticed among the Kaniags six different kinds of arrows and spears used for the chase of different animals.

Formerly the most important pursuit of the Kaniags was the chase of the whale. Only one species of this animal is known to visit this region, but according to their age the natives designate them by different names. The classification of whales adopted by the natives is as follows: First, the old or full-grown whale they call *annikrak*; the half grown, *karoikhnak*; the third, the yearling, *agashitnak*; and fourth, the calf, *akhvak*. Of these the yearlings and calves are hunted almost exclusively.

In the month of July the whales begin to make their appearance in the bays, following up the small fish and mollusks upon which they feed. Some bays are visited several times during the summer, and the hunt continues sometimes as late as August. For a successful chase calm, clear weather is necessary. On such occasions the two-hatch bidarkas leave the beach at early dawn for the bay where whales have been observed. Of the two men in each bidarka only the one in front is a whaler, the other acting as his assistant or oarsman, having nothing to do but to propel the canoe in accordance with the other's orders. Having approached to within spear-throw of a whale the man carefully notes the direction in which the animal dives and calculates to a nicety the spot where he will probably emerge. If he is fortunate enough to come within 20 or 30 feet of the rising monster the whaler throws his spear, aiming at the middle fin at the back; and as soon as the spear has been thrown the canoe is propelled away as rapidly as possible, in order to escape the violent movements of the wounded whale. It is principally on account of the danger of capsizing that two canoes always go together.

The spear is about 6 feet in length with a slate point. As soon as this point strikes the whale it breaks from the shaft and remains in the wound. The contortions of the animal only assist in forcing the missile deeper and deeper into the yielding blubber. Upon the point of his spear each hunter carves his mark to enable him to claim his quarry. As soon as the whale is wounded he makes for the open sea, where, as the natives say, he "goes to sleep" for three days; on the fourth or fifth day the carcass is cast upon the beach, but if the waves and currents are unfavorable this may occur in a locality remote from the killing place; and it is stated that on several occasions whales that had been killed at Kadiak were secured by the people of Oonalashka. In ancient times the pursuit of the whale was accompanied by numerous superstitious observances kept a secret by the hunters. Lieutenant Davidof states that the whalers preserved the bodies of brave or distinguished men in secluded caves, and before proceeding upon a whale-hunt would carry these dead bodies into a stream and then drink of the water thus tainted. One famous whaler of Kadiak who desired to flatter Baranof, the first chief manager of the Russian colonies, said to him: "When you die I shall try to steal your body," intending thus to express his great respect for Baranof. On the occasion of the death of a whaler his fellows would cut the body into pieces, each man taking one of them for the purpose of rubbing his spear-heads therewith. These pieces were dried or otherwise preserved, and were frequently taken into the canoes as talismans.

These observances are no longer in use, but there is still much superstition connected with the pursuit, and the greatest secrecy is observed in regard to it. Only once had I occasion to notice anything of the kind. This was in the settlement of Killuda, where I entered a hut in the corner of which a young woman lay covered with bear-skins; I asked if the woman was sick, and learned that her husband had gone to hunt whales, and that the wife was obliged to remain prostrate without food until his return in order to give him good luck. These people are at least nominally Christians.

The sea-otter chase is now conducted altogether by large parties of from 80 to 100 two-hatch canoes, which assemble at the beginning of May and proceed to distant hunting-grounds. It is necessary to await a perfectly calm day, when all the canoes leave the beach together, forming a long line. As soon as an otter is sighted by one of the men he elevates his paddle as a signal, when a circle is immediately formed by 10 or 15 canoes around the spot where the sea-otter is expected to rise. When the animal has received the first arrow it dives immediately, but a new circle is formed and the otter is prevented from escaping until, weakened with loss of blood and exhaustion, it finally falls an easy victim.

The sea-otter arrow of the Kaniags is of fine workmanship, and consists of a shaft about 2 feet in length, with a head-piece of bone 6 or 7 inches in length, which by its weight keeps the arrow upright in the water. The point of the arrow is also of bone and is very sharp; it is secured to the shaft with long strings, but is not attached to the head-piece, being set only into a mere socket. When the sea-otter is struck the point remains in the body and the shaft impedes the motion of the animal in diving. These bone points are also marked by hunters, and as the otter is rarely killed by a single arrow, usually requiring as many as four or five, the rule is that he whose arrow enters nearest the head becomes the possessor of the skin.

The sea throws up on the shore of Kadiak a so-called sea-bean which was greatly prized by the sea-otter hunters and secured by them as a talisman. Holmberg once offered a man 40 paper rubles (\$8) for one of these beans and was refused.

The spears used for hunting seals are larger than those just described, and are provided with inflated bladders to serve as buoys; and the bird spears and arrows have three or four thin prongs of bone.

The habits and customs of the Kaniags, their shamanism and religious views, have undergone great modifications. The introduction of the Christian religion and the rudiments of civilization, as well as the compulsory labor exacted by the Russian company, has done much toward eradicating the traces of former belief and amusements. Only a few old men and women preserve some confused recollections of the heroic age of the people, and these are not easily induced to communicate their knowledge to strangers.

Polygamy was formerly common among the Kaniags, a wealthy man frequently having five wives. Their marriages were accompanied with but little ceremony. The young man proceeded to the father of his chosen, and, after obtaining his consent, was obliged to carry wood and heat up the bath; then both he and his intended father-in-law bathed, while the relatives of the bride assembled for a feast. On emerging from the bath the young man adopted the name of his father-in-law and delivered his presents, taking away the bride to his own home. The first wife always had a preference above all others; and property descended first to the brother, and from him to the son of the deceased who had been previously selected by him as heir.

The position of the women at Kadiak was not as inferior as with most tribes of North America; they frequently enjoyed great respect, and had the power of maintaining "assistants" with the consent of their husbands. The "assistant" had no rights as such excepting in the absence of the original husband, and altogether his position was more that of a servant who carried the wood and water, gathered mussels, fished and hunted, etc. This custom was more common among the Kaniags than among the Thlinket.

We find among the ancient Kaniags the same cruel treatment of the young women at the age of puberty which prevails among the Thlinket. At this period the young girl was led into a hut, in which she was compelled to remain for six months in a stooping position upon her knees. After that the hut was enlarged sufficiently to enable the captive to straighten her back, but in this position she had to remain another half year, and was considered unclean and an outcast with whom nobody was allowed to communicate during all this period. At the expiration of the term of seclusion the parents prepared a feast and introduced their child as a marriageable young woman.

The dead were wrapped in seal-skins, and if they had been wealthy were buried with spears, arrows, canoes, and skis, and, with singing and weeping over the grave, were praised in accordance with their deserts. On such occasions the relatives cut short their hair and dyed their faces black. After the death of a rich man the widow gave a feast, frequently consuming all the property he had left, the people believing that every man became a spirit after death; and if such a spirit revealed himself to his relatives it was considered a sign of good fortune. The house in which a man had died could no longer be inhabited, and was torn down and a new one erected in its place. Dead shamans or sorcerers were laid with all their implements and insignia in bidarkas, these being generally deposited upon a steep cliff or occasionally in a cave. The memory of the dead was honored in a feast, during which distributions of presents were made and the praises of the deceased were sung.

The Kaniags were inveterate gamblers. They frequently lost all their possessions in a game they called "kaganagah", which was played as follows: Two seal-skins were spread out at a distance of 8 or 10 feet from each other, and a flat, round piece of bone about the size of a silver eagle was deposited upon each, the edge of the disk being marked with four black dots. The players, whose number was never more than four, but generally two, divided into two parties, and each put up some article of value. Each gambler had five wooden disks, and these he threw from the edge of one skin to the other, trying to cover the bone disk. When all the disks had been thrown the players examined their relative positions. If the bone disk had been covered the lucky thrower received from his opponent three bone sticks or marks; but if he had covered only one of the black dots of the disk he received two marks, and the wooden disk which had fallen nearest to the bone procured for the thrower one mark, and the marks were subsequently redeemed with valuables.

Among the Kaniags there were always a few individuals who possessed some knowledge of medicine, and knew certain herbs, which they applied in decoctions internally or externally. They were quite successful in blood-letting, which they accomplished with lancets made of shells; and they also performed more important operations, such as the cutting out of spear-heads, etc.

The festivals of the Kaniags began with certain secret ceremonies to which women and children were not admitted. Bundles of dry grass were ignited, and prayers imploring the spirits to give success to the hunters were chanted. Then the men emerged from the kashga (kashima, or council- or dance-house), and the whole population of the settlement ran about with lighted torches. This was the signal for the real beginning of the festival, which was open to all, and lasted as long as the provisions for entertaining the invited guests held out. Boys and girls could not attend until they had been introduced by their father, who on this occasion cut his best garment to pieces, giving away the fragments to the multitude in memory of the event. In the absence of the father the mother or other relative could take his place.

The council-house or kashiga in which the festivities took place was the property of the whole settlement. At the end of the festival the building was sometimes destroyed, and erected anew the following year. Sometimes a Kaniag cut his best garment into pieces at the end of the feast, giving the fragments to the guests in recognition of the honor of their visit.

These festivals consisted chiefly of gorging, dancing, and singing. In the diary of Lieutenant Davidof we find the subjoined description of two of such festivals among the Kaniags:

To-day, the 8th of December, 1802, we were invited to a festival, and at 8 o'clock in the evening we proceeded to the kashima, where several spectators were already seated in one of the side compartments. On entering we were struck by almost insupportable heat, there being 60 persons of both sexes seated upon the benches and floor of the small room. The men had all doffed their parkas on account of the heat, and some were entirely naked. The actors in the performances represented hunters about to set out on an expedition. About a large stone lamp that was burning in the middle of the room several men with drums were seated. These drums were of different sizes, the largest being in the hands of the one who acted as leader. On each side of the lamp sat two girls dressed in kamleikas and decked with ornaments. They had a long piece of bone through the partition of the nose, pendants of glass beads through the lower lips and ears, and the hair powdered with eagle-down. Beside these sat two men with rattles in one hand and a paddle in the other. The rattles consisted of double hoops to which the beaks of birds are fastened, producing a loud noise at every movement. Upon the blades of the paddles fish and marine animals were represented. The faces of these two actors were painted red, and the head as well as the back was powdered with eagle-down. They wore a head-dress of bent twigs; one of these twigs passing through the mouth like the bit of a horse. The faces were almost concealed with feathers and fern leaves. The men with the drums wore hats with feathers, arrows, and spears; a minnito bidarka constructed of skins, and implements of the chase, were hanging from the ceiling above from the actors, and all these objects were set in motion occasionally by means of a spring in the bands of a man seated at a distance. This man was dressed only in a kamleika. The ceiling as well as the floor was covered with dry grass. The two men seated near the lamp began to beat their drums with sticks; the hunters with paddles in their hands and swinging their rattles in time, and all singing in good voice with but little change of tune. The leader managed the song; whenever the drums beat faster the singers began to shout, and all the spectators joined in. The two girls grasped their kamleikas in their hands and swayed from one side to the other. The leader occasionally shouted a few words, such as "Look there! The shore! Let us embark there! He who has not killed anything will see the animals now", etc. Whenever the word "animal" was pronounced all the spectators joined in the great noise, imitating the voices of the different animals. Boys were blowing whistles, and the noise was deafening. At every interruption of the song the hunters swayed back and forth and plied their rattles. In the meantime trays with food were carried into the kashima and placed around the lamps; the dishes consisted chiefly of berries and oil; a stone marked with red dots had also been deposited near the lamp; this was said to represent the coffin of the distinguished men in whose memory the festival was given. I could not wait the end of the performance, as I suffered with a splitting headache caused by the heat.

On the 18th of December I attended another festival in the kashima. At first five men, all in different costumes and masks, some of them adorned with ferns, appeared one after the other, the blue thistles attached with a thread to the partition of the nose, and went through the most wonderful contortions. One was painted red, another black; two were attired in parkas, and the fifth in a kamleika; all had rattles in their hands. The first two and the one in the kamleika also had a garment of feathers hanging down to the knees near the lamp; two men in their ordinary costume were seated. I could not ascertain the meaning of this performance. The interpreter said they were men who had devils who betrayed the men, but he did not appear very certain about it himself. All the knowledge of traditions connected with festivals and of the spirits is confined to certain men who are called by the islanders *kassiatyi*—that is, wise men, who invented such representations and occasionally relate instances oft he ancient history of Kadiak and adjoining islands, and the actions of spirits. If a Kaniag cannot or will not answer a question he says, "the *kassiatyi* knows." After the devils had finished their contortions and disappeared the men began to drive out the women and children. This is generally done after a feast to which guests from distant settlements have been invited in order to talk over matters of importance, but on this occasion this could not be the motive, and the expulsion of women and children could only be attributed to some superstition. When the house had been cleared a man dressed in a kamleika appeared with a peculiar mask before his face and rattles in his hands. He represented the evil spirit, and shouted and ran about in time to a song and beating of the drums.

The wars of the Kaniags in ancient times consisted altogether of ambuscades and surprises, and prisoners were sometimes tortured and sometimes kept as slaves. The wars were chiefly confined to their own tribe, and it is stated that at the time the Russians appeared these interneceine quarrels had become so general that during the summer the inhabitants of small settlements entrenched themselves upon steep rocks surrounded by the water. I have seen several such fortified places, and this precautionary measure is easily explained when we consider that during the summer nearly all the able-bodied men are scattered over the hunting- and fishing-grounds, and those who remain in the settlements are not able to defend themselves against sudden attacks.

An old man named Arsenti Aminak related to Holmberg the story of the discoverer of the island of Ookamak as follows:

The island of Oookamak belonged to my father. He was a very rich chief, as there were ground-squirrels on this island, in the skins of which he drove a profitable trade. But how he came into possession of the island I will tell you. Formerly our people celebrated festivals with songs and dances, during which the guests were feasted and presented with gifts. For these festivals we proceeded occasionally to the bay of Igats, and sometimes the people of Igats visited us at Ayakhtalik. Once we were preparing for a feast, many years before the arrival of the first Russians, and before I was born, and among others a relative of my father, with an only companion, set out from the bay of Igats in a two-hatch bidarka. When they had left the strait between Sitkhalidak and Kadiak islands behind a dense fog came up, and as the wind changed imperceptibly they became confused and paddled on day and night. When the weather cleared they saw before them an island that they had never seen before. They landed and named it Oookamak. The island was full of sea-otters and ground-squirrels, and quantities of amber were found on the beach. They remained there a month, and when they left the island the bidarka was filled with treasures. But where to go? They proceeded northward, paddled and paddled until they sighted the mountains of the Alaska peninsula, which was strange to them. They arrived at Katmai, the people of which, being Ogalanutes, were hostile to the Kanlags, though they spoke our language. They threw themselves upon the strangers, robbed them of their treasures, and intended to kill them, but a chief saved them on condition that they should conduct them to the island containing such riches. They proceeded to Oookamak in two large bidarks, and killed a great number of sea-otters with clubs in a very short time. They also killed

ground-squirrels with spears, and gathered much amber; then they returned to Katmai. As a reward for their services the chief gave our lost men an escort to the crossing place of Yakolik, from whence they proceeded to my father's house at Ayakhtalik, after having been absent six months and having been mourned as dead. My father received his relative well, and in his joy to have escaped from such dangers he made a present of the newly-discovered island, with all its treasures, to my father.

Voluble as the old man was in relating the deeds of his people in ancient times he became mute when questioned concerning the old belief of his father. At first he would not speak at all, but finally he said, "I could tell you much, but I fear that it would cause you injury." This threat, however, did not frighten Holmberg, who pressed his demand, obtaining only brief answers to his questions. The little information he gathered is contained in the following:

Shliam Shoa, that is, the master of the world, was worshipped by the Kaniags as the Supreme God; he created the earth and the heavens, but light was not there. He sent two human beings, a brother and a sister, upon the earth, and prohibited them to eat grass. The sister was curious to know what might be the result of breaking the command, and said to the brother: "Probably it will be light when we eat grass." The brother advised her to desist, saying that it might cause them injury, and that they would be ashamed to look upon each other's naked body. The sister, however, could not resist the temptation, and began to eat grass, and behold there was light. They became very much ashamed, and wanted to separate. The sister went in one direction and the brother in another, but they could not hide themselves, and finally returned to heaven. Upon the steps leading to heaven they met and began to love each other. Five children that were born to them all died, to their great sorrow. Just before the birth of the sixth Shliam Shoa came and asked, "Why do you grieve?" They replied, "All children born to us die." "Do not grieve any more," said Shliam Shoa, "I will sing you a song and you shall have children thereafter;" and thus it happened. He sent them again to the earth, and from them the human race sprang. At one time a flood (*aliak*) is said to have destroyed the whole human race, but how the earth again became populated the old man did not know. After a fortunate hunt an offering was made to Shliam Shoa, consisting of some animals, sea-otters or seals, but never of human beings. The offerings were also brought in advance to secure good fortune. Iyak was the god of evil. He lived in the earth and also listened to the prayers of men, but he chiefly favored the shamans. When Shliam Shoa is angry at the doings of men he sends out two dwarfs who make thunder and lightning. In the volcanic mountains of Aliaska there lived men stronger than the Kaniags, who, when they heat their bath or cook their food, cause smoke and fire to issue from the summits of the mountains.

An old man of the village of Kaguliak told me that when the first Russians landed upon their island their ancestors took them to be cuttle-fish, "on account of the buttons on their clothes."

A list of Kadiak local names from Shelikhof's volume will be of interest when compared with those of the present. He mentions:

Kyktak—now Kadiak.

Ilinda—now Killuda.

Oogashik—not changed.

Ooga-alak—now Oogak.

Chinnigak (big cape)—now Chiniatzk.

Agiakhtalik—now Aiakhtalik.

Kerlnta—now Karlnk.

Yukutmak—now Katmai.

Katman—probably also Katmai.

The year began with the Kaniagmute in August, which was called *Kabiakhgun* (the constellation Pleiades was *Kabiakhtakh*).

September was *Tugakhgun* (from *Tugat*, the constellation of Orion).

October was *Kancha-oon* (when grass withers).

November was *Kangushanchak* (snow in the mountains).

December was *Kagliagrik* (rivers freeze).

January was *Agrinikh* (sixth month).

February was *Kypniakhchik* (dried fish in small pieces).

March was *Koigit annit* (river [ice] breaks up).

April was *Manikhchikhvak* (ravens lay eggs).

May was *Manikhchichak* (little birds lay eggs).

June was *Kaiog ya-at* (seals breed).

July was *Manag-khet* (porpoises have young).

THE CHUGACHIMUTE.—The Chugaehimute (Chingach of the Russians), or Chughchil-shvit (their tribal name), inhabit the shores of Prince William sound (or the gulf of Chugach). They are at present the easternmost tribe of purely Eskimo extraction, numbering less than 500 in all. Their language is almost identical with that of the Kaniagmute, and in their habits, manners, and traditions there is an equal resemblance. Here, as well as among the Kaniagmutes, we no longer find the kashga, or kashima; the dwellings are nearly always constructed of logs and planks, affording good shelter during the long, cold winter. Living as they do upon a narrow belt of timbered land surrounded by the inaccessible snow-capped alps of the Chugach range, the Chugachimute have become not only skillful sea-otter hunters and fishermen, but also expert mountaineers, hunting the mountain goat (or sheep) with skill, daring, and perseverance equaling those of any Swiss or Tyrolean chamois-hunter. These people are all Christians, in name at least, although they have been neglected for many years by the Russian missionaries stationed at Kadiak and Cook's inlet.

By their Athabaskan neighbors of Cook's inlet the Chugachimute are called Tatliakhtana, but, as one of their villages in the northern part of the sound is to-day Tatikhlek, this may have only a local significance. This tribe has always been in contact, both friendly and hostile, with its Athabaskan neighbors in the west and north, and with the Thlinket in the east, and this circumstance may have aided in making their character more warlike and repellent than that of other Eskimo tribes. Their first English visitors under Captain Meares and under Portlock and Dixon, had much cause to complain of the treatment received at the hands of these natives. The Russians also had many a battle with them before they could bring them into final subjection. These early visitors report, however, one custom, of which no trace has been found among any other tribes of Alaska, and which has been considered as belonging to the South Sea islands only. I refer to the exchange of names. Both Meares and Portlock report that they exchanged names with certain chiefs of the Chugachimute, and when Baranof visited Nuchek island an old man insisted upon exchanging names with the Russian chieftain's dog (Sargae). This was the last instance related of this curious custom, which seems to have been forgotten by the Chugachimute of to-day. In their intercourse with their Athabaskan neighbors, before mentioned, the Tinnats of Cook's inlet and the Atnahs of Copper river, this tribe does not seem to have indulged in intermarriage; but with the Thlinket, their eastern neighbors, such intermixture has been and is going on actively, forced, probably, by the latter strong and warlike tribe. Toward the end of the last century, when these natives first became known to us, another Eskimo tribe occupied the coast as far eastward as Mount Saint Elias. These were the Oughalakhmutes (Ongalente of the Russians), Wallamute and Lakhmutes of earliest visitors. This tribe, owing to its position, exposed to the constant attacks and encroachments of the Thlinket, has become mixed to such an extent that at the present day the Thlinket element predominates. Thlinket customs and habits prevail; their houses are built of planks, and in the Thlinket style of architecture, with circular openings in front. The fur garments or parkas of the Eskimo have been supplanted by the blanket worn by the Thlinket, and even the manufacture of the kaiak has been abandoned and is now forgotten by this hybrid tribe, occupying the lowlands at the mouth of the Copper river and the coast eastward to Comptroller bay, cutting off the Atnahs or Copper River Indians from the coast. So complete has been the amalgamation that young men of the Oughalakhmutes now employ an interpreter in dealing with their Chugachimute neighbors living at a distance of a few miles from them. The present custom among the Oughalakhmutes, and the Thlinket further to the eastward, of obtaining wives from their western Eskimo neighbors, shows clearly how this encroachment has been accomplished.

The burial-places of the Oughalakhmutes to-day exhibit the house-like sepulchers of the Thlinket, but as yet without the totem.

II.—THE ALEUTS.

The Aleuts (or *Unúnguu* of Dall, the *Takha-yuna* of the Kinnatz, or *Oonángan*, according to Veniaminof and my own observation) inhabit the northern coast of Alaska peninsula, from cape Stroganof westward, and its southern coast from Pavlof bay westward, the Shunagin islands, and the whole group known as the Aleutian chain, extending from the Shmagins in the east to the island of Attoo in the west.

~~The term~~ ^{as} Aleut applied to these tribes and also to some others by the Russians is of an origin somewhat obscure. Various explanations of its derivation have been given by different writers, but it would seem that it can be traced to the river Olutora on the coast of Kamchatka. The people inhabiting the coast near the mouth of this river were called by the Russians Olutorsky. They were known as the only Kamchatkan tribe who hunted whales, and they were called "strangers" by their Koriak neighbors. It would seem quite natural in view of these circumstances that the Russian promyshleniks on first beholding the Aleutian natives in pursuit of whales would apply to them the name of Olutorsky. On one of the earliest maps of the Aleutian archipelago, published by Staelin, we find two groups of islands, one named Aleutsky, the other Olutorsky, the latter being located near the mouth of the Olutora river. As no islands really exist in that vicinity, an equal right could be claimed for both terms as applicable to the Aleutian chain. The initial *O* of the Russian is invariably broadened into a sound almost equivalent to *a* in farther, and the transition from the Olutorsky to the Aleutsky of the later Russians would seem easy indeed. The term of *Oondangan* of Veniaminof I have ascertained to be as universally known to the Aleut people as Mr. William H. Dall has claimed for his version of the same, *Unúngun*. This apparent discrepancy may, however, be ascribed solely to an inability on the part of one or the other writer to distinguish between the finer inflections of pronunciation.

Various other appellations of the people have been collected and published by M. Alphonse Pinart, but they are evidently of local significance, and applicable only to the eastern, western, and central groups of the tribe, respectively.

Of the origin of the Aleut we have no very distinct tradition. The distance between the westernmost island of Attoo and the coast of Kamchatka and the Commander island is too great to permit of the theory of a general migration over this route from Asia. The two islands of Bering and Copper when discovered by the Russians were uninhabited; another point in opposition to the Asiatic theory. All such points of similarity between the Aleuts and Japanese as have been reported, as well as the general Asiatic cast of features observed in many of the Aleut settlements, can easily be explained by the constant intermixture of Aleutians with natives of Kamchatka

and other parts of Asia in the employ of the Russian invaders. Certain articles discovered in ancient Aleutian burial-earns would indicate that formerly there must have existed a constant and more intimate intercourse between the Aleutian and the Eskimo of the continental coast, as kantags or wooden bowls have been found in such places exactly resembling those manufactured on the coast of Bristol bay and the Alaska peninsula at the present time. Remains of huts built with whale-ribs, such as the coast Eskimo erect, have been discovered high upon the mountain sides of Oonimak and Atkha islands. These buildings were probably erected in the immediate vicinity of the sea-shore as it then was, the islands having since risen through volcanic action; and this also would militate against the theory of the original settlement of these islands from Asia. Another argument in favor of the American origin of the Aleut lies in the fact that the settlement of these islands would seem impossible without the aid of the kaiaks peculiar to the Eskimo tribes. The wide passages between the islands, which must have been still broader in the earliest times, preceding the gradual rising of this chain of craters, could not have been traversed by any craft less seaworthy than the kaiak, as the violence of storms prevailing throughout Bering sea and the fearful current of tides rushing in great bores through these passages would prevent any other craft from crossing from one island to another.

The theory advanced by Mr. William H. Dall, in the first volume of *Contributions to American Ethnology*, that the Aleutians built their present homes by passing from island to island on rafts, many thousands of years before the kaiak was invented, would seem altogether untenable in view of the fact that no material for making rafts exists or could ever have existed on the Aleutian islands and the adjoining portion of the continent.

Among the traditions of the Aleutian people concerning their origin we cannot find a single one pointing to immigration from Asia. The traditions on this subject, however, that have survived the transition from paganism to Christianity are very few.

We have many traditions speaking of warlike expeditions undertaken by Aleutian chiefs to the coast of the American continent, where they founded new communities; but in no instance do we hear of any communications with the west or the coast of Asia.

One of the traditions of the Aleutian people relating to the origin of sea-otters is of interest chiefly because it furnishes the only key to the curious superstitions of sea-otter hunters, who, when about to put to sea in search of their quarry, avoid most carefully all contact with women, or the use of any garments or implements that have been used or handled by women. The love of a chief's son for his sister resulted tragically in the drowning of both in the sea. They rose to the surface again, having been transformed into sea-otters; but, in remembrance of their progenitors' fate, these animals are said to hold in abhorrence anything that reminds them of the relations between man and woman.

The most careful observer of the Aleutian people was the Russian priest Veniaminof, who resided on the Aleutian islands and at Sitka between the years 1824 and 1838, and who wrote copiously and understandingly of their manners, customs, and traditions. I cannot do better than insert here a few extracts from his writings, in translation:

THE ALEUTIAN PEOPLE.

Under the head of "Traditions" the Russian missionary writes:

1. The Aleuts say that in olden times the weather was clearer and warmer, the winds more moderate. This last assertion is confirmed by the first Russian explorers.

2. They say that their forefathers came from their original dwelling-places in the west, in the same great land, which was called also "Aliakhshka", that is, continent. In that country there were no storms, no winters, but constant pleasant atmosphere, and the people lived peaceably and quietly; but in the course of time quarrels and intertribal wars compelled them to move farther and farther to the eastward, until they finally reached the sea-coast. Later they were even compelled to take to the water. But even on the coast they could not remain in peace, being pressed by other people, and therefore were compelled to seek refuge on the islands; and finally, traveling from island to island, they settled in their present villages.

3. Before the war and dissension broke out among them here they were accustomed to travel (*agoulaghan*) peaceably to the westward and eastward, to make the acquaintance of other people and their customs; and one of these travelers (*agoulanam*) succeeded in reaching the northernmost cape of America, which he named Kigaditigan Kamga, that is, Northern Head, and of which he told his people on his return that it was covered with ice, and told of the products of the country and the habitations of the people, who were as much afraid of heat as we are of polar cold; and at the time of the summer solstice they left their villages, fearing to die if they remained. Subsequently the object and direction of these voyages were gradually changed; in place of inquiries into the customs of other people, they began to travel for the sake of trade and traffic, and finally for purposes of plunder and slaughter, and to go to war.

4. The Aleuts consider as their relatives the Kenaitze, Chugach, Yakutats, and Kolosh (but the Kolosh do not acknowledge this). In substantiation of their claim the Aleuts say that one prominent individual, the father of a numerous family, was from necessity compelled to leave his village on Oonalashka; in one summer he collected all his family and relatives, and departed in large bidarkas to the northern side of the Aliakhshka, with the intention to travel (*agoulaghan*) and to search for a better and richer country. He landed in the first at one of the Aglenute villages and remained, but the Aglenutes did not receive them as friends, but as enemies, and in a general attack put them to flight. The Aleuts, finding it inconvenient or impossible to settle near the sea-coast, proceeded to the headwaters of some large river, and having selected a convenient spot settled down for good. Their descendants made peace with the natives of the country and increased, but with their increase came a greater change in their former customs, appearing principally in the greater inclination to war and to hunt. After the lapse of nine time a quarrel ensued between the descendants of the original Oonalashkans and the creoles or half-breeds, finally resulting in a war. Their village was situated on both sides of the stream, one half opposite the other. They had adopted the habit, for the sake of accustoming themselves to war, of making sharp attacks one upon the

other, shooting spears and arrows without points; but during one of these sham attacks some one placed a head upon his arrow and hit an enemy in the eye. The attack was at once changed from sham to reality, but as the number of creoles was much larger the Oonalashkans were obliged to leave the place and move farther eastward, finally passing from river to river and emerging upon the shores of the gulf of Kenai, where they settled down once more. The present Kenaitze are their descendants. The creoles left behind increased more and more, and divisions of them were compelled to move to the northeastward, and finally became the founders of the Chugachs, Yakutats, and Koloahs.

5. The Aleuts say that in former times their ancestors constructed deep caves as a protection against sudden attacks of the enemy, and in doing so occasionally found the bones of a larger race of people, whom they called Shongaman or Itangikh-Taiyagonn—that is, the first men, or those who, in their opinion, lived before the flood. These bones and skeletons were mostly found in the third layer of earth, and were rarely found to be fossilized; and whenever such a bone was unearthed a very strong, disagreeable odor spread around, driving away all bystanders. They believe that some time ago there was a large flood, and that up to that time men were of larger size, but their philosophers asserted that half-dead people live everywhere under the surface of the earth.

6. They say that in their old country (they do not know of any other) there was also a very great flood in punishment of disregard of sacred customs and traditions. They express it in their language for "our evil doings the water came upon us".

7. In former times the sea-shore along the whole group of islands was more deeply indented (in some localities this is even yet perceptible); they also say that the grandfathers of the present Aleuts in their youth heard from their grandfathers that they found on elevated spots, and often far distant from the sea, signs of former dwellings, such as whale-ribs and large logs of drift-wood. Between these places and the shore-line they also found sometimes small pebbles tied with whalebone fiber, such as are now used for sinkers, fish-lines, and nets. From these indications the Aleuts came to the conclusion that at some time these elevated positions, showing the remains of dwelling-places, were on the sea-shore, and over the places where the sinkers are now found the sea once extended. But all this was subsequent to the flood.

8. With regard to the volcanoes, the Aleuts maintain in their traditions that in times gone by all the "fire mountains" on Oonalashka and Oumnak islands quarreled among themselves as to which had the largest body of fire inside of them, and after a prolonged dispute, in which not one of them would yield to the others, they concluded that a decision could only be made by a trial of strength. Immediately a most fearful conflict ensued, lasting for many days, the mountains throwing fire and rocks at each other in place of spears; the smaller peaks could not withstand the larger ones, and, recognizing their weakness, they bowed down and went out forever. Finally only two of their craters remained, one on Oonalashka—Maknshin (Ayak)—and the other on Oumnak, the Reeheshnaia (Ismak). These, having vanquished all the others, engaged in a single-handed conflict with the most disastrous consequences to their surroundings; fire, rock, and ashes were thrown in such quantities that all animals inhabiting the neighborhood perished and the air became heavy. The Oumnak crater finally could not keep up with its rival, and, seeing destruction impending, gathered all its strength, jumped up with a bound and collapsed. The Maknshin volcano, being victor and but little injured, and seeing no more enemies around him, gradually calmed down, and now only smokes occasionally.

With regard to early estimates of the Aleut population upon the islands I cannot do better than again quote Veniaminof, who wrote as follows in 1840:

The number of native inhabitants of the islands of the Alaska district, exclusive of Russians and creoles, has been of late very small. In 1834 all the Aleuts belonging to the district, that is, those living in the villages on Oonalashka and on the Pribylof islands, numbered 682 males and 812 females—a total of 1,494 souls. In 1806 the number had been 1,953—965 males and 988 females. Mr. Sarychef, in his voyage, writes that with the arrival of the Russians on these islands the number of native inhabitants decreased greatly, and during his presence in 1792 barely one-third of the inhabitants remained. A consultation of his tables, however, shows that then the males alone numbered 1,235; if we add to this the larger number of females, the inhabitants of Alaska district in 1792, exclusive of those living on the Pribylof islands, were more than 2,500 souls. If, again, we take this number for one-third, as Sarychef says, the number of inhabitants in 1750, or about the time of the arrival of the Russians, must have been not less than 8,000.

The traditions of the Aleuts are to the effect that up to the arrival of the Russians their number was ten times greater than Sarychef found it. Old men relate that a long time ago, before the arrival of the Russians, the inhabitants of Oonalashka district were so numerous that every island and every convenient location was settled, and that in every village were from 40 to 70 bidarkas, with as many adult males able to propel a bidarka; and if we add to these as many females, and twice as many children and old men, it follows that every village contained from 150 to 280 souls, or an average of 215. From personal observations and from tales of the Aleuts I must suppose that in this district 120 villages were located, and thus supposing that each village contained a nearly equal population, it seems that the inhabitants of the Aleutian islands in their best times numbered 25,000. Doubtless this number is somewhat large, but as far as we can trust to the accounts of Aleuts, as well as of Russians who lived here at the end of the last century, and who saw with their own eyes the destruction of many villages, it seems very probable that the number of the Aleuts once reached twelve or fifteen thousand. Of the reasons of decrease we shall speak below, and only remark here that the decrease of the Aleuts in numbers began long before the arrival of the Russians, and continued steadily down to the year 1822. From that period to 1829 the decrease ceased; and from 1829 to 1838, until the appearance of the small-pox, the number of Aleuts began to increase. The smallest number of Aleuts we find in 1820 and 1821. In 1822 the registers showed 695 males, 779 females—a total of 1,474. From this it is evident that in 1834 the number of Aleuts had increased by 20 males, without counting the females then married to Russians and creoles, who represented at least an equal number. Glancing at the appended tables of births and deaths from 1822 to 1837 we see that during the first five years the number of Aleuts born average 34 per annum, and, exclusive of illegitimate births, 29. During the last nine years, however, the average was 40; exclusive of the illegitimate, 38. Consequently, of late the number of births has increased nearly fourfold. And here it is also necessary to take into consideration that the number of females who bore children, or were able to bear them, was, up to 1828, very much larger than after that period. This is evident from the fact that of 172 souls born from 1822 to 1828, 25 were illegitimate, that is, one-seventh of all the births; but in the last nine years only 17 out of 362 births were illegitimate—less than 1 in 21. The reasons why births were formerly less frequent than of late may be briefly stated as follows:

First. The absence of midwives and ignorance of managing women in child-birth. It is true that though a few who are more intimately acquainted with the Russians have adopted their customs before and after the birth of children, being convinced by example and persuasion, but at the present time there are still very many who proceed in their old way.

Second. The married women are still very dissolute, and their excesses interfere with their fruitfulness, but of late there has been great improvement observed in this respect.

Third. In former times the Aleuts were entirely at the mercy of vicious and ignorant hunters. It was quite common to force young girls into marriage with the strangers at too early an age. Of late, however, the teaching of Christian doctrines has counteracted this evil.

Fourth. The diseases of various kinds introduced by the Russians have also interfered with the fruitfulness of women, but this cause has now been nearly overcome.

Fifth. Another obstacle to more rapid increase of population will probably be found in the fact that the Aleuts suffer from temporary starvation every spring, the fathers and mothers on such occasions thinking only of their children, and forgetting themselves to such an extent that in some families the parents can scarcely be recognized as their former selves, while the children are fat and healthy.

These are the reasons why births were of comparatively rare occurrence among the women in former times (in no greater proportion than one to nine), and why they are now more frequent. It is necessary to remark that in their present mode of life the Aleut women cannot at all compare in fruitfulness with Russian women, because, having no milk beside their own, they must nurse their children not less than a year. It has been mentioned above that in the course of ten years the number of Aleuts increased only by 10 from a total of 1,474, that is one-fourteenth of 1 per cent.; but the increase of creoles in ten years was very much greater, showing 31 births among 120 married couples, or about 26 per cent. The reasons why the wives of creoles, who were nearly all Aleuts, are much more fruitful than the wives of Aleuts may be the following: The wives of creoles at the time of birth proceed not according to the Aleut but according to the Russian custom. All creoles are generally possessed of means to procure flour and tea, and keep on hand a sufficiency of provisions at all times. All creoles are also much better lodged than the Aleuts, at least in so far as they have warmer huts and more clothing and linen than the Aleuts, who are not in a condition to procure them. The causes of decrease in population are, in the opinion of Aleuts themselves, internal wars, the Russians, and diseases; the first, occurring previous to the arrival of the Russians, were conducted with such cruelty that in retaliation for the murder of one, whole settlements were destroyed; but the greatest decimation of the Aleut population they ascribe to the Russians, and especially to Solovief, who was the direct or indirect cause of it, as, exclusive of those whom he and his companions killed during the course of two years, not one-third of those who fled before him returned to their habitations. It is supposed that a majority of those who did not return died from cold and hunger, while the younger and healthier Aleuts found means of subsistence and would not return, and these are the first fugitives mentioned here. In addition, it is said that even when the slaughter ceased, and the Aleuts, becoming accustomed to the later arrivals of Russians, began to live peacefully once more, the population not only failed to increase but decreased very perceptibly for some reason unknown to them. The causes of decrease among the Aleuts of this district may be divided into three periods: First, from the beginning of their internal wars to the first appearance of Russians among them—that is, up to 1760. Second, from the first arrival of the Russians on these islands to the arrival of the expedition of Billings—that is, up to 1790; and, third, from the time of the departure of this expedition until the present time. Each period, in addition to those causes common to all times, has its own proper causes entirely distinct from each other; that is, prior to the arrival of the Russians the Aleuts decreased from internal wars; after the arrival of the Russians, from violence and oppression, but subsequently from being compelled to fit out hunting parties and recruit their columns.

Each period presents a multitude of more or less important incidents, but I shall speak only of such as are best known and entitled to credence.

THE FIRST PERIOD.—A long time before the arrival of the Russians the Aleuts began to have wars with neighboring tribes—with the Aglemute, and principally with the Kadiaks. Thus it is told that the inhabitants of this district destroyed an Aglemute village on the Nushegak river, at the site of the present rédoute of Alexandrovsk. This victory was so overwhelming that not one of the Aglemute escaped, and a lake situated near the village was filled with blood and corpses. Several times they attacked the Kadiaks and destroyed their villages. However, though these enterprises were bold and frequently successful, it was but natural that sometimes the Aleuts should meet with disaster. It occurred several times that out of the whole contingent of islanders departing upon such expeditions not one returned, or only a few. Mr. Davidof relates that many Oonalashka Aleuts perished in Ooiaik bay on Kadiak island, whither they had proceeded for the purpose of attacking the Kadiaks. Retaliation was the order of the day, and both sides suffered severely. Gradually these wars or warlike raids became of such frequent occurrence that the inhabitants of the Shumagin islands were compelled either to join the hostiles or to retreat to their fastnesses on inaccessible cliffs or outlying rocks. Locked up in their fortifications, not daring to leave them, they could not secure their winters' supplies and died of starvation. In addition to such wars and mutual attacks of different tribes there was also much internal conflict. It is known that the people of Oonimak attacked those of the Shumagin islands, Alaska peninsula, Oonalashka, and even Umnak and the Krenitzin islands. The Umnak people made raids upon the Oonalashkans and others. In the course of time the raiders were repelled in their turn, and general destruction, amounting almost to extermination, ensued. It is known that of an attacking party of Oonimak people on the island of Amaknak, in Captain's harbor, all remained on the field of action. Finally the internal dissensions increased to such an extent that not only the inhabitants of one island fell upon those of another, but the people of one and the same island made war upon each other, and inflicted upon each other every imaginable injury. Thus the Aleuts of Oonalga killed several men from a neighboring village on Oonalashka simply because they had threatened to kill one of them. There is no doubt that all these wars caused the destruction of a large number of Aleuts in addition to those slain in conflict. For instance, of the wives and children of the Aleuts who perished at Ooiaik bay, on Kadiak, many who lost husbands and fathers suffered want, and the tradition that the Aleut population previous to the internal wars was twice what the Russians found it becomes probable. A few old Aleuts maintain that if the Russians had not made their appearance upon these islands the population would have entirely disappeared by this time. From this standpoint the arrival of the Russians, which had put an end to the internal war and strife, may be considered as a blessing to the hunters.

THE SECOND PERIOD.—When the Russians arrived the internal strife was discontinued, and one particular cause of decrease in numbers was removed, but the rate of decrease remained the same. The peace and good understanding established between the Russians who first visited Umnak and Oonalashka islands under the leadership of Glotoff lasted but a short time. It is not definitely known who gave the first provocation to quarrel—the Russians by oppression and violence of every kind, or the Aleuts by refusing to submit to the foreign yoke. The first is much more probable, but the last must not be entirely overlooked. Whatever the cause was, the first hostile measures were taken by the islanders, who during one winter destroyed three Russian ships and thereby gave the Russians a pretext for avenging the blood of their countrymen and for adopting stringent measures for their own protection. It devolved upon Glotoff and Solovief to wreak unlimited vengeance. Glotoff having returned from Kadiak to the island of Umnak, previously discovered by him, found the friendship and good feeling formerly existing between him and the Umnak people changed to hostility. In retaliation murder and fire took the place of peace and good understanding. Under the pretext of avenging the death of his countrymen, and partially from fear, he destroyed all the villages on the southern side of Umnak and the inhabitants of the islands Samalgi and Four Mountains. Solovief, who had arrived on Oonalashka from Kamchatka, and anchored his ship in Koshigin bay, treated the poor Aleuts with excessive cruelty, also under the pretext of avenging the death of Drushinin, another trader. Mr. Berg, in his history of the discovery of the Aleutian islands, endeavors to underestimate the number of islanders slain by Solovief, but for all that he says that Solovief killed 100 men who had attacked the Russian station, and from one fortified village destroyed by fire 200 bodies were thrown into the water. Consequently, it appears from the testimony of this prejudiced witness that Solovief destroyed not less than 300 able-bodied males and youths. Nearly a century has elapsed since these dreadful times, and there is no longer any reason for concealing the deeds of the first Russian promyshleniks, nor to exaggerate their cruel treatment of the Aleuts. The facts cannot be changed or mended, and, though there is no necessity for parading the dreadful cruelties of ignorant and vicious people, especially as these men were Russians

and my countrymen, I am compelled to speak of what I heard from very many who had been eye-witnesses, or heard the same from Solovief's own companions (I have personally interviewed many Aleuts who had known Solovief); this must be done in order to bring forward new evidence of what men will do when left to themselves with unlimited power and no fear of retribution. Without this my account of these people would be incomplete.

The Aleuts say that the Russians shot many of their number with their muskets only for sport, using them as targets, but others deny this; but it certainly occurred more than once, at least in this district, and particularly in the village of Koshigia. It was Solovief who conceived the idea of ascertaining how many human bodies a bullet would pierce, and to this end he ordered twelve Aleuts to be tied together (who were probably not altogether guiltless), and shot at them with his rifle. It is said that the bullet lodged in the ninth man. It is also known that he destroyed two bidarkas of Oumnak Aleuts who had come to visit their kin, and after many single wanton murders he finally found the inhabitants of several Oonalashka villages assembled on Egg Island, Sprikin, and fertilized. The second attack of Solovief was successful, and he destroyed all the besieged Aleuts, with their wives and children. This slaughter was so general that the sea in the neighborhood was covered with blood from the dead and wounded thrown into it.

Natrubin, partner and worthy companion of Solovief, destroyed the Aleuts on Ayntanok, unarmed and frequently innocent, and it is said that Solovief himself did not kill as many Aleuts as his companions on the neighboring islands. During this time, so terrible to the Aleuts, there were two Russian ships in the vicinity, one at Issanak strait and the other at Makushin, the crews of which also destroyed many Aleuts. The Russians on the first vessel, from suspicion or in revenge of the Russians killed at Issanak, destroyed the four villages on Oenimak island, sparing only the young females and a few youths. The Russians, under the leadership of their "peredovchik", who had with him a girl from Atkha, left a few men on the ship and proceeded to Oenimak, with the intention of exterminating the rebellious people. Secretly making their way to the first village they secured all the spears from the bidarkas, where they are always kept by the Aleuts, and broke them; then, suddenly falling upon the defenseless inhabitants in their dwellings, they slaughtered without mercy all who succeeded in emerging from the houses, while the remainder perished in the flames. In the same manner three villages were destroyed. On approaching the fourth, however, situated at the foot of Shishaldin mountain, they were overtaken by a severe rain-storm, and thoroughly drenched and disheartened. The inhabitants sighted them from afar and recognized them as Russians. The chief proposed to meet them outside of the village and kill them, saying that they did not come to them for nothing, but the other prominent inhabitants refused to agree, saying: "Why should we kill them when they have as yet done us no harm?" Consequently the islanders received the Russians kindly, warming them and providing them with food. The Russians were exhausted to such a degree that they could not descend into the subterranean huts without assistance. The poor Aleuts did not know what they were doing. The Russians, having recovered their strength, at once went to work. Having assembled all the natives under some pretext, they began to shoot them down without mercy. They then proceeded on their way to continue the work of death, but the inhabitants of the next village disputed their entrance into the village, and, making a sudden sortie, killed the peredovchik and his girl, wounded a few, and put the remainder to flight. The place was subsequently called "a dangerous village" by the Russians. It is not quite clear to which ship these Russians belonged—to that of Protosoff or to that of Bechevin. It is also related that some Russians destroyed three villages on Ikatak island, and that they fired upon and killed a number of Aleuts who were coming to make them presents of fish.

The second ship at anchor in the bay of Makushin appears to have been the same mentioned by Berg as being under command of Brigin. The Aleuts of one of the villages in the neighborhood, being informed of the destruction of Drushinin's ship in Captain's harbor, made up their minds to imitate the example of another village; the Russians, however, being warned of their danger, turned the tables and annihilated the plotters.

Horrible as the deeds of these first Russian visitors were, some excuse may be found for them, and in some instances retaliation was absolutely necessary. The doings of later arrivals, however, cannot be excused upon any ground. The promyshleniks coming to the islands between 1770 and 1790 followed the example of their predecessors, and indulged in the most revolting cruelties. The names of Ocheredin and Polntovsky became especially obnoxious at this period. Of their followers, many are still held in dreadful remembrance by the Aleuts; among them are Lazaref, Molatile, Peter Katyshevtszof, Shabaief, Knkanof, Sitnikof, Brunkhanof, and Malkof. The first two of these were on Akoon island, and the others farther to the eastward. These men placed not the slightest value upon the life of an Aleut. It is well known and authenticated that the first threw over precipices, cut with knives—which he always carried with him—and felled with axes a number of Aleuts for no other reason than that they dared to look at his concubine (who died only in 1838). One of those men named let out the entrails of an Aleut girl because she had eaten a favorite piece of whale-meat which he had set aside for himself. When we consider all these murders—I do not speak of such cases as are not fully substantiated—and take into consideration the consequences, it would seem that the number of Aleuts slain by Solovief, according to Davidof, is not exaggerated; he places it at 3,000, and even the number of 5,000, mentioned by Sarychef as that of Aleuts murdered by the Russians, is not without probability. Sarychef calls it a moderate estimate.

At last, in 1790, the arrival of the Billings expedition put an end to murder and cruelties, and a more peaceable life began.

THIRD PERIOD.—Though cruelties and murder ceased after the departure of Billings' expedition, the decrease in the Aleut population did not cease. Misfortunes of another kind, brought about by dangerous pursuits and voyages, formed a new reason for the decrease of the islanders. Thus at one time Merkulief, an agent at Oonalashka, sent eighty families to the Pribilof islands, of whom less than one-half returned; thirty-two of these were lost at one time in 1812, in a bidar commanded by Zakharof, and never heard from. A number of others were killed at various times by sea-lions.

The occupation of Sitka by Baranof made it necessary to push forward re-enforcements of men, and a hundred men with their families were dispatched to Sitka in their bidarkas, but only one-third of them ever returned. The rapid decrease in the number of sea-otters made a more active pursuit of the animal necessary, involving long voyages from one hunting-ground to the other. During such journeys many perished; in 1809 a bidarka with 40 people, in crossing from Oumnak Island to the coast of the peninsula; in 1811 a bidarka with 30 men; in 1824 20 bidarkas which left the Four Mountain islands were lost; and, finally, in 1828, a bidar with 15 men in the Akutan straits. In addition to these disasters there were, of course, numbers of less importance. It is impossible to ascertain the whole number of lives lost in this way; it is certain that the number greatly exceeded that of deaths from natural causes. In addition to the causes of decrease already mentioned, there were others that may be called unavoidable and unforeseen causes, such as famine and infectious diseases, both of which were very prominent factors in decreasing the population. Famine made its appearance at the time of the internal wars, according to the traditions of the Aleuts, and it seems that its victims were more numerous than those of battle. Ever since that time famine has been a constant visitor among the Aleuts, before and after the arrival of the Russians, and even after the establishment of the present privileged company. The Aleuts never lay up great stores of provisions, and nearly every year they suffer at least a partial famine during the first months of the year. Their name for the month of March is Khissagounak—that is, "when straps are chewed." This expresses that about that time they had no proper food. It is evident, therefore, that at such a time the least misfortune in hunting

may bring about the most dreadful consequences. But what must be the condition in those villages where only women and children remain—the men having perished, or gone away by order of the company? This was often the case in former times; indeed, numerous instances of wholesale starvation are known. Under the administration of Burénin all the inhabitants of one of the villages on the eastern coast of Akutan died of hunger, only one old woman remaining to tell the tale. Also, under Petroff's administration, in 1822, seven people died in Koshigin village of hunger, but, thanks to the efforts of the officers and chiefs, such disasters are likely in the future to be prevented, though scarcity of food may still be apprehended.

Of epidemic diseases we have but little information. They have occurred in this district, but the deaths have been less here than in other regions of the colonies. The nature of epidemics in early times is of course unknown, but in 1807 and 1808 there occurred on Oonalashka an epidemic called the "bloody fever," which began in the principal village and rapidly spread over the whole district, a very large number of men and young women dying of the same; old people seeming to have been entirely exempt. The greatest mortality was in the principal village. After the wreck of an American ship, under command of O'Kane, the virulent disease made its appearance, the origin of which was ascribed to the eating of wet rice. This disease began to spread, and attacked large numbers, in every case those who partook of the rice. In 1830, in the autumn, an epidemic began and continued until the spring of the following year; thirty people, mostly youths and strong men, died of this disease, but children, old men, and the whole female sex seemed to have been exempt. The greatest mortality from this cause was at Ounga, where the disease had appeared some time before, and extended to the Alaska peninsula. On the other islands it was unknown. The last epidemic was the small-pox, which appeared here in 1838. The syphilitic disease was perhaps the most disastrous of all, but the extent of its ravages has not been ascertained. This disease appeared with the Russians, and committed its greatest ravages about 1798. At that time there were whole families and even villages, from the oldest to the youngest, marked by this dreadful disease. Such a family came under my own observation in Makushiu village, but I believe that this family was the last victim of this plague, as since that time I have observed but rare instances, principally in the harbor village during the presence of ships.

THE AGE AND ORIGIN OF THE ALEUTIAN PEOPLE.

To express a definite or authoritative opinion on the subject would be impossible, because there is no definite information concerning it; opinions must be necessarily based upon guess-work up to traditions of the Aleuts themselves and local indications.

Were these islands always inhabited, and who were the first inhabitants—Aleuts or another people? At the first glance upon the islands of the Oonalashka district, devoid of timber and poor in products of the land, it becomes evident that the present Aleuts must be the first inhabitants; and it would also appear that they did not settle here very long ago. The traditions of the formation of these islands are not very clear, but we encounter at every step the traces of volcanic revolutions of comparatively recent date. Traces of villages have scarcely been traced by time, and whenever the old men point to a spot where a village existed in former times we can still perceive the ground-work of the houses, and even the holes for seasoning the fish, and a luxuriant growth of grasses plainly indicating the extent of the former settlements; therefore we may conclude that the islands have not been inhabited very long, and that the present Aleuts are the first race that settled upon them.

From whence came the Aleuts to these islands—from America or from Asia? The traditions of the Aleuts, chiefly transmitted in songs, say that the Aleuts came from the west, near the great land, then Aliakshakh, or Tnam Angouua, which was their original habitation, and that they wandered from there to these islands, and then gradually extended to the eastward and finally penetrated to the present Alaska peninsula.

Tnam Angouua is now one of the Four Mountain islands, and in its present condition certainly does not deserve the name of "great land" when compared with any of the other islands. Perhaps it received its name from being the largest of the Four Mountain islands; but in spite of this some of the Aleuts believe that they originated there. This theory would only be admissible if we were to assume that the Four Mountain islands at one time formed one body of land together with the Andreianof islands, and perhaps was united with Kamchatka. But it is much more probable that the Aleuts really came from the west, from a great land—that is, Asia—and their descendants penetrating farther to the eastward, though preserving the tradition about coming from the great land situated in the west, lost any definite idea of the same, forgetting, perhaps, the very existence of Asia, and began to believe that the small island Tnam Angouua was the place of their origin.

The migration of the Aleuts from the westward may be accepted as a fact; and even if the mainland of Asia and the Aleutian islands were always at the same distance from each other that they are now, the island of Bering is visible in clear weather from Kamchatka, and from Bering the nearest Aleutian island can sometimes be sighted [?]. This would indicate the route of the migration; as to the mode of conveyance by which the Aleuts made their way from the continent, it is most probable that they traveled in canoes and bidarkas, since in former times the weather was very much finer during the summer and clearer than it is now. Such journeys from the Kamchatka shore to the Aleutian islands were accomplished even after ships had commenced to make the voyage. We might add that if the Aleuts came from Asia they must have come from Kamchatka, or from Japan over the Kurile islands, and in that case there should be some similarity, in language and customs and mode of life, between the Aleuts and the coast people of Asia. At any rate, the Aleuts bear greater resemblances to the Asiatic than to the Americans; while, on the other hand, the Fox Island Aleuts, in their appearance, mode of life, and customs, resemble more closely the North American native, especially the Kadiaks. Their language, though differing from that of surrounding tribes, is constructed in the same manner as that of the Kadiaks, which is known to all the tribes inhabiting the coast of North America; and even the language of the Cbugachs (Chukches ?) is a branch of it. There seems to be no similarity between it and the Japanese, as far as I can judge from questioning the Japanese who visited Sitkn.

But even this theory could be overturned by the following question: Supposing that the Aleuts and other Americans speaking the Kadiak language had, some time before the settlement of America, lived in close vicinity, the latter to the southward and nearer to Kamchatka, and the former to the northward and nearer to Cape Chukhotsk; but, in time, being pressed by other tribes, they were compelled to migrate to their present residence, the first from Kamchatka to Bering island and farther on; the latter probably much earlier crossed Bering strait to America, and perhaps continuing on their way southward and founding other nations, such as the Kolosh, the Indians, Mexicans, and others. In this case they should not forget the wars carried on, especially between the Aleuts and the Kadiaks. Was not this strife, which existed before the arrival of the Russians, the remnant of wars between them before migration?

We know now that Veniaminof misunderstood the meaning of some of the Aleutian traditions. The Tnam Angouua, or Four Mountain group, was formerly a center of population among the islands, as can easily be surmised from the large number of ancient village-sites and burial-eaves found here; and from Tnam Angouua other islands were doubtless settled. The name Aliakshakh or Alakshak was always applied to the Alaska peninsula.

GOVERNMENT.

Veniaminof wrote as follows on this subject:

Before saying anything of the government of the Aleuts I must refer to their present condition and rights. At the present time all the Aleuts may be said to form a class of laborers, because even their tribal chiefs are only overseers, frequently laboring with their command, and not in any way distinguished from the others. Only of late years the head chiefs appointed by the commander of the colonies, and selected by the Aleuts from their own chiefs, have enjoyed a certain distinction, especially in their intercourse with the office managers.

In former times the Aleuts were divided into three classes—the chiefs, the common people, and kalgis or slaves; the chiefs and their children and relatives and their descendants composed the highest class, prominent in warlike exploits, and skilled in the chase. The class of common people consisted of ordinary Aleuts, not differing from servants or laborers, but the slaves were prisoners of war and their descendants.

The right of disposing of slaves was only vested in the upper class; the common people rarely had slaves, and no slave had any authority whatever over another. The power of the master over his slave was almost unlimited; he could punish him with death for crime without incurring any responsibility; he could sell him or trade him for goods; he could give him away, or set him at liberty. The price of slaves was nearly always at the rate of a hidarka and a good parka for a couple of slaves, that is, a man and a woman; and of a stone knife, bunch of hends, or a sea-otter garment for a single slave. The slave could hold no property; everything he acquired belonged to his master. He was always obliged to accompany his master and protect him in cases of attack, and, in consideration of this, the master was obliged to support not only the slave, but his family. A slave suffering want would bring dishonor upon his master. Good and kind masters maintained their slaves, and especially the industrious and faithful among them, like their own children, and the name of slave was the only distinction between them and the children of their master.

The form of government of the Aleuts may be called patriarchal. Every village consisted always of relatives and formed only one family, where the oldest of the tribe was named Toyone (*Toukhoukh*), and had power over all, but his power was very much that of a father over a large family; that is, he was obliged to look after the common welfare, and to protect his territory (every village had its grounds set apart); strangers were not allowed to hunt in grounds thus set aside; infraction of this rule often gave rise to wars. That chief was the leader in war, but he had no right to take from his command anything except the share due to his family of all food, furs, or drift-wood, whether he was present at the distribution or not; but his share was not greater than that of any other man. With regard to the affairs of the community his power extended far enough to enable him to send out anybody with sons or relatives to execute any errand that might benefit the community, but on his own business he could not dispatch anybody. No special honor or outward respect was shown to the chief. The Aleuts had punishments, and even capital punishment, but the latter could not be inflicted by the chief without the consent of all the nobles. The chief could not begin wars with neighbors without the consent of other chiefs living on the same island, and without the consent of the oldest among them.

A few villages, the inhabitants of which had sprung from one family, formed a state or community where the oldest chief descended in a straight line from their forefathers, who first settled the islands, was the ruler. If no direct descendant was available, the head chief was selected among the other chiefs for his bravery, wisdom, and skill in hunting. He had such powers over the other chiefs as were vested in the chief of the village over his own people. It was his duty to protect all and avenge insults; in case of war he commanded, all the force with the consent of other chiefs, and made peace in the same way. Without his consent no subchief could make war upon his neighbors, or undertake a raid against the Kadiaks, or set out upon any important hunting expedition. Of all that was cast up by the sea he had an equal share with the people of each settlement, and therefore such head chiefs became richer, and consequently stronger, than the others. The respect in which the head chief was held by the neighboring tribes depended entirely upon the influence which he wielded over his own subordinates. The principal chief, with such powers and rights, may be called the ruler of his island or district, but the Aleuts never had any chief or ruler who had the right to dispose arbitrarily of the whole community.

I have already remarked that the Aleuts have capital punishment. The murderer and the betrayer of community secrets were punished with death. When it had been reported that an Aleut had committed a crime worthy of death, the chief assembled the council, composed of all the nobles and old men and himself; he laid the matter before them and asked their opinion, and when all were unanimous in judging the accused as worthy of death, all the males seated themselves in an open space, armed with their spears. The culprit was also brought out, surrounded by a few young men at the command of the chief, and suddenly, at a preconcerted signal, they thrust their spears into him. If after this he was still alive one of the warriors was ordered to stab or cut him to death. It must be remarked that it was not necessary to keep the culprit guarded or to bind him during the punishment, because every criminal endeavored to make the greatest display of indifference in the face of death. He never wasted words in exclamation or in appeals for mercy; he walked upright and fearlessly to the place of execution, in order to make his name famous among his people. Many of such executed criminals are still praised in the songs transmitted to their descendants.

Other less important crimes were punished at first by reprimand by the chief before the community, and upon repetition the offender was bound and kept in such a condition for some time. This was a great disgrace; in rare instances the men thus tied were beaten. The law with regard to slaves was more strict and better defined. For disobedience the ears were cut off; for insolence to the master, lips were severed; and if any evil resulted from indiscretion on the part of slaves, such as war or quarrels, the offender was put to death. For the first attempt to escape they received corporal punishment; for the second, their hands were tied at their back, and in such condition they were kept a long time; for the third attempt they were hamstrung; and for the fourth attempt the punishment was always death. The mode of putting slaves to death was entirely different from ordinary executions. They were not speared, as other people, but killed with clubs. For the first theft (which was considered a very disgraceful crime, especially when the slaves stole from strangers), corporal punishment was inflicted; for the second offense of the kind some fingers of the right hand were cut off; for the third, the left hand and sometimes the lips were amputated; and for the fourth offense the punishment was death.

The power of the chiefs and all the rights of the Aleuts were in full force at the time when the population was greatest. Interior wars decreased the number of Aleuts, and at the same time the power of the chiefs and their own privileges, but with the arrival of the Russians the latter were entirely extinguished, and even the power of the chiefs remained only a shadow. Soloviev and his companions, who undertook the work of pacifying, or rather exterminating, the Aleuts, first lessened the influence of the chiefs over their people. The Russians who followed in their wake also adopted this policy, until the chiefs were distinguished in no way from other Aleuts, being exempt neither from labor nor from punishment. In course of time the Aleuts began to look upon the chiefs as their equals in every other respect. Our government empowered the commanders of naval expeditions that visited this region between 1792 and 1823 to confer bronze, silver, and gold medals upon the chiefs, and the new regulations of the Russian-American Company provided for the distinction of chiefs from common people, restoring to them a portion of their former power. It is difficult, however, to restore or establish what has no stability in itself. Of late years (1832) the colonial government found it necessary to set up in this region two or three head chiefs selected

by the Aleuts themselves from the number of tribal chiefs and confirmed by the chief manager of the colonies. And thus the present government and management of the Aleuts depend altogether upon the Russian-American Company, acting through the manager of the Oonalashka district, who, on the strength of his office, gives directions and orders to the "bidarshiks" for transmitting the same to the Aleuts through their chiefs; or the manager consults with the head chief and a few others, and explains to them his orders concerning hunting, and similar subjects, asking them how many bidarkas they can furnish for the sea-otter parties, and how many men for shooting birds, etc. The present rights and duties of the Aleuts are as follows: They enjoy the protection of the law equally with the serfs, but they are exempt from all duties and taxes. As an offset to this, they are obliged to serve the company from the fifteenth to the fiftieth year of their age, receiving pay from the company for their services. All furs which they may obtain must be sold exclusively to the company at certain prices established by the government.

It may be asked, is the present government of the Aleuts and their present condition good? I answer, it is good; because the Aleuts aside from their service with the company, enjoy complete liberty, and their service is only temporary and always for pay. The company takes good care that the man appointed as the manager of the Ounalashkan district be a man of good intentions and executes strictly the directions of the colonial government. The Aleuts have not recovered their former liberty, but there is no necessity for changing their present condition for any other. Any change could only be injurious and even disastrous. It would be perhaps desirable that the Aleuts should receive for their fur prices somewhat commensurate with those charged for goods, and also that their head chiefs should have the right to look at the accounts of the Aleuts kept at the various offices, and that all the chiefs be furnished with written rules and instructions for their guidance. Such changes as these might prove beneficial to the various communities.

RELIGION AND BELIEFS.

The religious belief of the early Aleuts was an outgrowth of shamanism as found in the Asiatic possessions of Russia. The Aleuts believed and acknowledged that there is and must be a creator of everything visible and invisible, and who was called by them Agoungheukh, that is, creator; but having only a limited understanding, they did not connect him with the management of the world, and showed him no particular respect. Worshipping no one being, they soon came to worship everything that seemed of importance to them. As rulers of everything in their surroundings they have acknowledged two spirits, or two kinds of spirits, who regulated the fate of man in every respect. The first they called Khongakh, and the second Aglikhaiak. Some of these worked blessings to man and others only evil, but how far their influence extended and the limits of their power, even their best theologians could not define.

Among the earliest Aleuts there may have been worship of the light and of celestial bodies. The first may be surmised from their custom of saluting the light. (a) The second supposition is based upon the fact that they were always afraid, and still show reluctance to say anything bad of the celestial bodies. The old men told the youths that anybody speaking ill of the sun—for instance, complaining of its heat or glare—would be struck blind and never see its light again. The moon was supposed to kill its slanderers with stones; and whoever censured the stars would be compelled to count them or else lose his life. If, in the summer time, upon a clear and calm day, some youth would complain to his companion of the heat, and regret the winter with all its storms and famine, such carelessness was always punished by the sudden appearance of violent gales and storms, and if the offense was repeated the winter would always make its appearance earlier and with greater severity than common. In this way the young Aleuts learned to display the greatest indifference to all changes of weather and temperature.

The Aleuts believed that there were three worlds, each with its separate beings and doings. The first world—which was called Akaeon Kughondakh, that is, the highest world, where there was no night or evening, and where a multitude of people live forever. The second world was our globe. The third was subterranean, and called Sitkoughikh Kouyndakh, where there was also a multitude of people, whether mortal or immortal was and is not known. They had no temples, but there were sacred or hallowed localities called Aoudeagadakh, and also sacrifices to invisible spirits. The first could be found in every village, being generally some rock or cliff or other prominent place. The females and young men were strictly prohibited from visiting such places, and especially from gathering the grasses and weeds growing upon them. Any infraction of this prohibition on the part of bold or curious youngsters was sure to be followed by disease and speedy death. In a few instances insanity was the consequence. The adult males could visit these spots at certain times, and only for the purpose of sacrificing.

The offerings (*ákhakhilik*, that is, "All his to him he gave") were of two kinds, one optional and the other defined. The first sacrifice consisted of almost any object, principally the skins of animals, which were brought to the sacred spots with trifling ceremony and prayers for assistance in war or the chase. The second sacrifice consisted of the tail-feathers of cormorants and a few other birds only worn by men. These sacred places were protected only by prohibition. The *modus operandi* consisted of the votary's taking a certain number of feathers, smearing each of them with some paint, generally green or red, and throwing them to the four winds and uttering his request to the invisible spirits every time that the feathers escaped from his fingers. When the sacrifice was completed the man simply said: "Now give me what I ask."

The early Aleuts had shamans and shamanism, but what their sorcery consisted of is now difficult to ascertain, beyond the fact that it was accompanied with the usual accessories of songs, dances, beating of drums, and contortions. The shamans here as elsewhere called themselves mediators between the visible and invisible world—between men and spirits; and the mass of the people believed that they were acquainted with demons who could foretell the future and aid these sufferers, and therefore turned to them for aid in dangerous sickness or misfortune, asked them for good luck in hunting, long life, rescue from danger at sea, the calming of gales; and also those who were not acconchens called them into their houses in cases of difficult birth.

Concerning their knowledge of the future the old Aleuts assert that some of the more prominent shamans had foretold, long prior to the arrival of the Russians, that white men with strange customs would come to them from the sea, and that subsequently all the Aleuts would be transformed to resemble the new arrivals and live according to their customs. They also asserted that at the time of the first appearance of the Russians they saw to the eastward of their islands a bright light, or large star, containing many people resembling the now-comers, but in the lower world few people remained, and inpenetrable darkness set in.

^a This early custom is described as follows:

The grown men were in the habit of emerging from their huts as soon as day was breaking, naked, and standing with their face to the east, or wherever the dawn appeared, and having rinsed their mouths with water saluted the light and the wind; after this ceremony they would proceed to the rivulet supplying them with drinking water, strike the water several times with the palm of their hands, saying: "I am not asleep; I am alive; I greet with you the life-giving light, and I will always live with thee." While saying this they also had their faces turned to the east, lifting the right arm so as to throw the water, dripping from it, over their bodies. Then throwing water over the head and washing face and hands, they waded into the stream up to their knees and awaited the first appearance of the sun. Then they would carry water to their homes for use during the day. In localities where there was no stream the ceremony was performed on the sea-beach in the same manner, with the exception that they carried no water away with them.

In spite of all their knowledge and power, and their efforts to impose upon the ignorant, the shamans were not held in much respect, being scarcely distinguished from other people; though helping other people, they frequently were themselves in want of assistance, and were forced to apply to others. They perished from hunger and accident like their fellows. It was a very rare occurrence that the son of a shaman adopted the trade of his father; probably the shaman on his death-bed forbade his son to do so, explaining to him the worst side of his position, and turning his desires into another direction. Many of the shamans called their occupation "servants of the devil", and told the young men that nobody who had any fear or apprehension must lay claim to the title of shaman; and that they themselves had not adopted the profession voluntarily, but because they were powerless to resist the devil. The Aleutian shamans said they could not summon spirits (as the Kolosh do), but that the spirits made them their servants. They claimed that from the age of fifteen years the devil begins to trouble them with constant apparitions and delusions; while hunting at sea they would constantly see an island rise before them, or immense cliffs bar their way to the shore; traveling on foot they would be tempted from their path by other kinds of apparitions in the shape of animals or marvelous beings, until they were bewildered and willing to submit to their inevitable masters. It is known that the Aleutian shamans have nothing whatever to do with marriages, births, or the bringing of sacrifices.

The Aleuts had an indefinite belief in the immortality of souls and in a future life. This becomes evident from the fact that prominent individuals on their death directed the killing of slaves to serve them in the other world as they had done here. They could not say what the condition of souls was in the future world, but the slaves considered it a favor and an honor to be sent with their master, and therefore we may conclude that they expected to live pleasantly in the coming life.

They all believed that the souls of the dead, or, as they called them, "shadow," remained invisible among their people, accompanying them on land and sea, especially those whom they had loved, and that they were in a condition to do good as well as evil. Therefore the living called upon the dead in times of danger, especially in wars undertaken for avenging insults to the tribe.

With regard to the origin of the first man the Aleutian theologians are not unanimous. Of all their various theories, either very absurd or grotesque, or very similar to our sacred history, I present here only two. One says that at the beginning the earth was vacant, uninhabited by nobody; but at one time there fell from heaven to the earth two beings somewhat resembling man, but they had long fur all over their bodies. From them sprang a couple of similar beings, but without the fur; and from this couple again came all the people, and began to spread out to the east and north (they do not mention the south, they did not suppose the people could live there;) the place where these people originated was warm—there was no winter, no gales, but a perpetually pleasant climate. The first human beings were long-lived, strong, and hardy. At the beginning the people lived peacefully and in friendship, knowing no dependence or independence, no quarrel, and no wants; but with the increase of people want and necessities appeared, and in their train the art of making arms, or hunting animals; then came dissensions and wars, and the arms were turned against men. Want and the oppression of the weaker by the stronger compelled the former to migrate from their original habitations, and thus the world was peopled.

Others say that before any people appeared on Oonalashka or other parts of America there was on the island of Unaska one man (his name is not known), who, having lived for a long time in utter solitude, began to think that perhaps somewhere in the world there might be other people like him, and therefore, with the intention of searching for his fellows, he concluded to travel. He constructed a boat—a kind of bidarka—called oniliak. At first he circumnavigated Unaska, and, finding nobody there, he went on to the island of Four Mountains; there also he found nobody. Finally he proceeded to Ounnak, and, landing upon its western extremity, went ashore and at once saw a human track. A short time elapsed and a woman walked up from the beach in grass boots. He was not long in making her acquaintance, and as she suited his taste he made her his wife. From this couple sprang all the people inhabiting the northwestern part of America. The first fruit of this union was a dog; the second, a very strange being of the male sex with wings, who, when he grew up, began to say to his parents, "I am not like men; you have no share in me." The mother, having heard this remark several times, and seeing that he actually was not like them, nor apt to propagate the human family, and consequently would only work evil, proposed to her husband to kill him, and the father consented. When they had killed him with their own hands a son was born to them, and then a daughter, perfect human beings, and from these last couples people began to multiply. But their children moved away from them, and some spoke different languages. The difference of speech induced them to scatter all the more in all directions; those speaking one language settling together, and those migrating to the eastward founded the various nations of the mainland of America.

The superstitions of the Aleuts were innumerable. Every action or undertaking or every step required its own observances and talismans. Of the latter the most common was a girdle plaited of sinews and grasses under invocations; and certain pebbles, called by them "chimkikh", cast out by the sea occasionally. (This pebble resembles in shape a turnip, but is hollow inside, smooth on the outside, and of two colors, one entirely white with yellow rings, and another red with white rings. The first were called maaie and the other female pebbles.) The first talisman was worn on the naked body as an unfailing protection from death during hostile attacks or encounters with animals. Possessed of this charm a man would conquer everybody and everything without injury to himself. In spite of the fact that the material of these girdles was of no value whatever, they were by no means plentiful, and passed as heirlooms in families from father to son, or from uncle to nephew, with certain ceremonies. The second talisman was exceedingly rare, and, therefore, very highly valued. The fortunate individual that found such a one preserved it in some secret and clean place, and never looked upon it until the house was quiet, and after having washed his hands, and never unless some dreadful danger threatened. This pebble was only taken from its resting-place on sea-otter expeditions, when it served as a charm to attract the coveted game. The lucky possessor was always fortunate in the chase; he did not hunt the sea-otter, the sea-otter gathered around him and gazed at him with loving eyes.

To secure success in fishing they attach charms to the line and hook, consisting of small fragments of roots, weeds, or anything green or colored.

The pursuit of whales was enumbered with many observances and superstitions. The spear-heads used in hunting the whale were greased with human fat, or portions of human bodies were tied to them, obtained from corpses found in burial caves, or portions of a widow's garments, or some poisoned roots or weed. (a) All such objects had their own special properties and influences, and the whalers always kept them in their bidarkas. The hunter who launched a spear provided with such a charm upon a whale at once blew upon his hands, and having sent one spear and struck the whale, he would not throw again, but would proceed at once to his home, separate himself from his people in a specially-constructed hovel, where he remained three days without food or drink, and without touching or looking upon a female. During this time of seclusion he sojourned occasionally in imitation of the wounded and dying whale, in order to prevent the whale struck by him from leaving the coast. On the fourth day he emerged from his seclusion and bathed in the sea, shrieking in a hoarse voice and beating the water with his hands. Then, taking with him a companion, he proceeded to the shore where

^a Aleuts assert that some of the corpses found at the present day in caves on one of the Four Mountain islands were in the same condition in their earliest times as they are now. They are lying together, one beside the other, clothed in dog-skin parkas: their beard and hair are reddish, the skin of the body black; and from these corpses the hunters endeavored to detach some pieces of the body, or perhaps a fragment of clothing. The hunters who obtain such charms are always fortunate in their pursuit, but meet with an untimely and painful death. They begin to putrefy while yet in their prime.

he presumed the whale had lodged, and if the animal was dead he commenced at once to cut out the place where the death-wound had been inflicted. If the whale was not dead the hunter once more returned to his home and continued washing himself until the whale died.

For hunting the sea-otter such poisoned spears were not used, but as the Aleuts believed that the sea-otter was a transformed human being, they endeavored to ornament their bidarkas, their garments, and their spears as much as possible, in the belief that the sea-otter would be attracted by the beauty of the outfit.

Of the many superstitions concerning health, long life, etc., I know only of their fathers and uncles endeavoring to obtain the viscid expectorative matter from the throat of some old man famous for his achievements, and of irreproachable character, who had been healthy, and compelling their children or relatives to swallow it as a preventive against all violent and epidemic diseases, and as a general strengthener of the body. Such old men, in dying, frequently blessed their relatives, and gave them some of their gray hairs, or fragments of their clothing, or arms which they had carried in wars, and ordered them to preserve them as charms against misfortune and disease.

The females had their own observances and customs at times of birth, etc., of which I do not know the particulars, and perhaps they are not worth knowing.

It is remarkable that with their talismans, and invocations, and other superstitions ceremonies it is a rule to admit no female and to impart no knowledge of these ceremonies to the other sex, the greatest disaster being threatened in case of infraction of this rule. For instance, a whale-hunter who had violated this law would be seized, before the stricken whale had yet expired, with violent nose-bleeding and swelling of the whole body, often ending in insanity or death. The sea-otter hunter was not subject to such terrible punishments, but he met with misfortune in the chase, and, though surrounded by sea-otters, could not kill a single one—the animals laughing at him, gathering around his bidarka, and throwing water into his face in sport. The same happens to sea-otter hunters whose wives prove unfaithful during their absence, or whose sister is unchaste. The same strange conduct of the sea-otters was sometimes observed toward the lazy, civil-disposed, or disrespectful toward the aged. It is impossible for any belief to exist without some moral lesson contained in it, and we may consider that even the superstitions of the Aleuts led toward cleanliness of body and a careful execution of their duties, no matter how absurd and respectful the demeanor.

I will endeavor to give here briefly the moral code, which I believe is evidently contained or hidden in the mass of superstition among the early Aleuts:

First. The old men said it was necessary to respect parents because they gave us life and nursed us in sickness and brought us up with great trouble, full of kindness, and deprived themselves for our sake without knowing what we would do for them, and, therefore, we should sincerely love them, do all we could toward their support, remain with them, and care for them until their death; if they should become blind or feeble we should take them by the hand and lead them. To disregard one's parents was considered the greatest and most dishonorable of crimes.

Second. If one had no father he should respect his oldest brother and serve him as he would a father, and a brother himself must always aid his brother in war as well as in the chase, and each protect the other; but if anybody, disregarding this natural law, should go to live apart, caring only for himself, such a one should be discarded by his relatives in case of attack by enemies or animals, or in time of storm; and such dishonorable conduct would lead to general contempt.

Third. Feeble old men must be respected and attended when they need aid, and the young and strong should give them a share of their booty and help them through all their troubles, endeavoring to obtain in exchange their good advice only; and whoever acts thus will be long-lived, be fortunate in the chase and in war, and will not be neglected when he becomes old himself.

Fourth. The poor must not be neglected, but assisted; not only not abused, but protected against abuse, because man does not always remain in the same condition, and even in the richest and most powerful tribes, as well as in the lowly and poor, sometimes quite unexpectedly their condition changes, and the rich will become poor and the poor rich, and therefore:

Fifth. During poverty they should be humble and respectful, and not offend the rich who divide with the poor.

Sixth. We should be hospitable; every visitor should be received as liberally as possible, and feasted, in order that he, on his return to his people, may speak of us with praise.

Seventh. All who move to another village are called strangers during the first year, and such must not be abused, but aided and assisted in every way, and considered as of the people. Under such they will sooner forget their own home and become accustomed to the new; and in case of need will be defenders of the village.

Eighth. We must not be forward; it is better to listen than to speak in every condition of life. That is what made people in olden times long-lived and strong, because they talked but little. Every evil and misfortune springs from the tongue; therefore in olden times those who caused common misfortune by imprudent talk were frequently punished with death.

Ninth. The children were instructed to be kind in their intercourse with others; to refrain from selfishness; to be bold in case of hostile attacks, and disdain death, and to strive to accomplish some famous deed, such as avenging the death of their relatives, and so forth.

Tenth. The following offenses were considered as worthy of death or punishment: for instance, to abuse a companion without cause by word or deed, or to kill him (but to kill an enemy was quite another thing); to take another's property; to steal or rob (theft was not only a crime but a disgrace); to betray secrets of the councils of war; to grumble at severe weather, cold, wind, or heat of the sun; to talk unnecessarily and unfavorably of stars and clouds; to defile in any manner a sacred spot, or a stream of running water, so as to prevent fish from coming up, or to disturb the sea in the vicinity of the village, and thereby drive away the fish or game. Girls or unmarried females who gave birth to illegitimate children were to be killed for shame, and hidden; their children were called "auikshoumi agoucha", that is, "hidden children." (a)

Incest was considered the gravest crime, and was punished with great severity; it was believed always to be followed by the birth of monsters with walrus-tusks, beard, and other disfigurement.

a The Aleuts said and still maintain that illegitimate infants killed from shame would begin some time after being buried to cry and weep like new-born babes, and finally they would begin to walk around at night in the villages, appearing like little clouds, weeping also, and when many such children were observed the fathers of families assembled and tried to find out the guilty persons, and if the culprit would not confess they sometimes proceeded to torture. The kindest father would not screen his favorite daughter in such a case; but when the guilty person was discovered she was smeared with paint and placed in a dark and bleak hovel. Here she was seated in a corner and covered with a grass mat with two slits so as to expose the breast, and then she was obliged to sit in that position night after night in order that the hidden child might come and nurse and not disturb the virtuous women. Whenever there was evidence that a woman had nursed an infant during the night, her sin was forgiven. Sometimes a woman thus locked up would cry out in the night, and the men, with arms in their hands, would hurriedly enter the hut, when in her arms was found not a babe, but a small black bird. This bird was killed with certain ceremonies, and torn into small fragments, and the nightly disturbance ceased forever.

The Aleuts still maintain that a failure to observe the customs of their forefathers, and especially a willful neglect of the same, is attended with all kinds of disasters and punishments. They always return good for good and evil for evil. It was considered praiseworthy to go to sea in times of gales and to make difficult landings. As a proof of such achievements they would mark their bodies in some way to indicate that they had been on some inaccessible cliff, or that they landed unassisted with their bldarka at some spot where nobody had yet landed before. But still more praiseworthy it was to be brave in war. The first duty was to be kind to strangers, because their forefathers had been travelers, and they had all sprung from one father and one mother.

The light—the life-giving principle; running water gave strength to the body, but the sea-water was still stronger, making men fearless and invincible. Therefore, whoever was in his youth afraid of the sea would be forced to bathe, and thereby be made strong and brave.

One of their sayings was, "The wind is no river;" that is, the river runs always and never stops, but the wind sometimes stops. Another saying was, "A bear is not a man;" by which they meant that a bear is not so revengeful and bloodthirsty as a man. Another saying was, "Not out of every sweet root grows a sweet plant;" that is, good children do not always come from good parents.

The teachings of their faith and all customs were transmitted in two ways, either from father to son, or, more frequently, from uncle to nephew. This teaching may be called domestic. Another manner of propagating their doctrines was communal or public, when the teachers were not shamans but old men who had lived to a great age and become famous for their achievements and disinterested life. Such old men considered it their duty to teach the young on every occasion, and this was done nearly every day, in the morning and in the evening; that is, when all were at home. The old man would go to the middle of the barabara for this purpose and seat himself, and all the young people would surround him and listen attentively to all he said; even if he repeated the same advice for the hundredth time they would listen to him with respect, because they considered it their duty to do so.

Now let us speak of their present faith. The Aleuts, as well as the Kadiaks, are baptized Americans (*i. e.*, natives), and are of the Greek-Russian faith, which they adopted from Russia. The Aleuts may justly be called exemplary Christians, because they abandoned shamanism as soon as they received Christianity; not only the outward signs of it, such as masks and charms, which they used in their dances and invocations, but even the very songs in which they transmitted the deeds of their ancestors, and their former belief and customs, were all forgotten without any compulsion. The first to convert and baptize them was the Ierodiakon (or holy monk) Makar (a member of the Kadiak mission), who had been sent to the Aleuts from Kadiak in 1795. He did not have recourse to any violent measures in inducing them to be baptized, and if he had been inclined to forcible means he had not the power. The Aleuts received the new belief very willingly. The best proof of this lies in the fact that Father Makar traveled from place to place, to the most distant villages, without having any protector with the exception of one Russian servant. The Aleuts themselves transported him from place to place, fed him, and protected him on his errand of baptism. And from that time to the present the Aleuts have been God-fearing and religiously inclined. They willingly assemble for prayer wherever there is an opportunity for service, and especially when they are visited by a priest. During service of prayer they stand in rapt attention and admiration, without turning to one side or the other, and without shifting from one foot to the other, no matter how long the service. At the end one may look at the prints of their feet and count how many there were; and though they understand but very little of the teachings of the church they never slacken their attention during the service. All religious observances required of them they fulfill to the letter. I need not mention that they strictly observe the fasts, because hunger goes for nothing with them for two or three days at a time. But nothing pleased me so much as the willingness, or rather the ardor, with which they listened to the word of God, their ardor being so great as to fatigue the most earnest teacher. This I can assert from personal experience. During my journeys among them, whenever I arrived at a village, all at once left their avocations, no matter how important to their immediate or future comfort; they collected around me at the first signal, all listening to me in rapt attention, forgetful of everything else; even tender mothers sometimes disregarded their crying children, whom they had left behind in their huts. The strong and healthy would carry the old and feeble to the place of meeting.

When we compare the Aleuts with the Kadiaks, their neighbors, in a religious sense, there seems to be a great disparity. The Kadiaks practice shamanism to the present day, and all their former superstitions are still in full force, while among the Aleuts the former does not exist at all and the latter have almost disappeared. Only about one hundredth part of the Kadiaks fulfill these observances to any extent, and very few show any ardor or interest, while the Aleuts are, in that respect, not behind the best Christians of our time. Such a difference is all the more astonishing because the Kadiaks have enjoyed the benefits of missionaries among them since 1794, but the Aleuts have had a resident priest among them only since 1824, having up to that time seen only Father Makar, their baptizer, once, and for a very short time; and also two chaplains of naval vessels, in 1792 and 1821, also for a very short period, and then only at the principal village. This is not a place to decide why the Kadiaks, with every facility for christianization, have remained only half Christians, but it would be very curious to find a reason why the Aleuts so commonly and almost suddenly changed their belief—their simple and easy belief—for the very strictest, and why they show so much more interest than their neighbors. The principal reason for this I believe to lie in their character. The Oonalashkans have more good qualities than bad, and consequently the seeds of the word of God find better and deeper soil and grow with greater speed. It must be acknowledged, however, that the contempt in which the shamans were held facilitated the work of the mission. Any other stronger reason inducing the Aleuts to accept their faith I cannot find. It is true we may say the Aleuts accepted Christianity because they had only a very vague and unsatisfactory belief that did not satisfy the demands of their souls, and that they had reason to fear the Russians and were eager to please them; and, third and last, because the acceptance of Christianity exempted them from the payment of tribute. All these reasons may have induced them to change their faith, but certainly could not make them the earnest observers of its rules that they are; but when we come to scrutinize these reasons they appear but weak. It is true that their former religion was unsatisfactory, but could the Christian faith be any more so to them at first? In the absence of good interpreters they could have but incomplete understanding of God and his attributes; and could even that Christian faith be satisfying to their hearts when the first preacher of the same could not express himself sufficiently well in their language to explain its most beneficial mysteries, and forbade their own custom of polygamy? The Aleuts are very subservient, but we must acknowledge that the Russians never attempted to compel them to baptism in any way. As the most powerful reason may be considered the exemption of new converts from the payment of tribute, especially since they thereby escaped the dreaded oppression of tribute-gatherers; but if we consider the trifling value of such tribute, which they pay only at their option, and also that the exemption only continued for three years, even this reason appears insufficient to account for their earnestness in accepting the new faith.

The Christian faith was carried to America (I mean only Russian America) by the Russians. The commander of the first vessel which discovered the Aleutian Islands, Glotoff, and his companions, were the first propagandists of Christianity in America. Glotoff, during the first time of his stay at Unalaska, in 1759, established such friendly relations with the native inhabitants that the chief allowed him to baptize his son and to carry him away to Kamchatka. He lived here several years, and learned the Russian language and grammar, and then returned to his country in the capacity of supreme chief over all the islands. This convert, who may be considered the first among all our Americans, was named Ivan, with the surname of Glotoff. He assisted greatly in spreading Christianity among the Aleuts. It is

unknown that Glottof and his companions baptized anybody except the son of the chief, but we know that they erected at that place a large cross, on the site of which a chapel was subsequently erected in honor of Saint Nicholas, and in 1826 was replaced by a new one. (a)

For some time after Glottof's visit to the island the Russians in the Oonalashka district forgot to baptize any more Aleuts, being occupied solely with their "pacification", as they called it, or rather extermination, and not before 1780, when the so-called pacification ceased, did the Russians once more begin to think of this subject. It was not so much Christian ardor as business considerations that induced the Russians to persuade the Aleuts to the acceptance of baptism, since the converted natives became more manageable, and attached, to a certain extent, to their god-fathers, giving their trade exclusively to them. Whatever the reasons were, the fact remains the same, that the first Russian hunters were the first baptizers of the Aleuts, and subsequently of the Kadiaks, thus paving the way and facilitating the work of the missionaries coming after them.

Shelikhof, the founder of the present company, included in his plans for the development of the Russian colonies the spread of Christianity and the erection of churches, and therefore on his return from Kadiak, in 1787, he petitioned the government for the appointment of a mission, which he promised to transport to the field of action and maintain at the sole expense of himself and his partners. His petition was answered, and a mission was detailed by the holy synod, under the command of the archimandrite Ioassaf, for preaching the word of God to the tribes annexed to the Russian dominion. A mission was fitted out with everything, and even with more than was necessary, by Shelikhof and his partners, and departed from St. Petersburg in 1793, arriving at Kadiak in the following autumn, where they began their labors at once. (b)

Juvenal first visited Kadiak and baptized all the inhabitants; in the following year, 1795, he went to Nuehek, where he baptized 700 Chingachs, and then proceeded to Kenai and baptized all the people there; in 1796 he crossed over to the Aliaska peninsula and penetrated to the lake Ilyamna, where he ended his apostolic services with his life, having done more service to the church than all his companions. The cause of his death was his strong opposition to polygamy. It is said that when he was attacked by the savages Juvenal did neither fly nor defend himself, which he might have done successfully, but delivered himself unresistingly into the hands of his murderers, asking only for the safety of his companions, which was granted. The savages relate that after the missionary had been killed he rose up once more, walked toward his murderers, and spoke to them; they fell upon him again, but he repeated his miracle several times. At last the savages became exasperated and cut him into pieces, and then only did the preacher of the word of God become silent. Father Makar proceeded to Oonalashka in 1795, and traveled over the whole district from Onnga to the Four Mountains, and baptized all Aleuts without exception. The other members of the mission confined their activity to holding services in the churches at their respective locations and teaching children in the schools, but Herman began from the very first a secluded life on a small island (Spruce island), devoting himself to prayer and agriculture. Subsequently he taught a few girls, orphans, in the Russian language and manual labor, and this small establishment was in a very good condition when visited by Baron Wrangell. Among the work of the Kadiak mission must be mentioned that in 1806 the monk Gideon, who visited the island in the ship Neva, translated the Lord's prayer into the Kadiak language, and it was sung in the churches after that time. Subsequently, however, it was neglected and finally lost. Mr. Shelikhof, who considered such a man equal to the work of spreading the word of God in such a vast region, represented to the government the necessity for additional action, but the drowning of the bishop appointed and the death of Shelikhof himself put an end for the time being to the enterprise.

Baranof, having established Sitka, asked for a priest, and in 1816 the priest Alexei Sokolof arrived there. Subsequently, when the charter of the Russian-American Company was renewed, in 1821, they were ordered to maintain a sufficient number of priests in the colonies. The company petitioned to have them sent out, and the prayer was granted. Veniaminof arrived in Alaska in 1823; Frumenty Mordovskoi entered Kadiak in 1824, and a creole, born at Atkha, Yukof Netzvetof, was assigned to his native island in 1825. This last-named worthy pastor did much toward the spread of the Christian faith; he subsequently transcribed my translations of the Evangel and catechism from the Oonalashkan into the Atkhan dialect.

At the present time we have in our American colonies four churches, one at Sitka, in honor of the archangel Michael, established in 1817; the second at Kadiak, in the name of the elevation of the cross, established in 1795; the third at Oonalashka, in honor of the resurrection of Christ, established in 1824; the fourth at Atkha, in the name of Saint Nicholas, established in 1825. Nushegak and the Rédoute Saint Michael in the north have remained thus far without priests, since the priest of Kadiak, to whom the former properly belongs, finds it impossible to visit it, and the Oonalashka priest can do so but rarely. Many converts have been made in that region, and a church or mission will doubtless be established there before long. The following translations have been made in the Aleut tongue to assist in the spread of Christianity: A brief catechism that was printed by permission of the holy synod in 1831, at the instance of the American-Russian Company. The Evangel of Matthew, which the holy synod allowed to be used in manuscript, and a pamphlet entitled "Guide to the Short Road to the Heavenly Kingdom" was also used in manuscript. To the honor of the Aleuts it must be stated that they eagerly read these books as soon as presented to them in their own tongue.

DESCRIPTION OF FORMER CUSTOMS AND BELIEFS OF THE ATKHA ALEUTS. (c)

The Atkha Aleuts, or the inhabitants of the Andreianof, Rat, and Bering islands, situated between the Oonalashka district and Kainchatka, are of the same tribe or nationality as the Oonalashka Aleuts. This is proved by their language, customs, character, and outward appearance.

a This cross was in course of time used by some Russians in the construction of a house for the posts of a sleeping platform, very unnecessarily; but old men and eye-witnesses assert that as soon as the men began to sleep on the platform an unknown disease broke out among them, and one-half of those living in the house died, while the Aleuts living around them remained in good health.

b The personnel of this first mission was as follows:

1st. The archimandrite Ioassaf. He returned to Irkutsk in 1797 for promotion to the grade of archierey, and in returning from there to Kadiak he was drowned with all the occupants of the ship Phoenix.

2d. The archimandrite Ieromonakh Juvenal (who had once been a mining engineer) was killed by the natives in 1796 near lake Ilyamna.

3d. Archimandrite Makar, the christianizer of the Aleuts, returned to Irkutsk in 1796, and on his return, in the suite of the bishop, was drowned with him.

4th. Archimandrite Afanassy filled the office of priest at Kadiak until 1825, and then returned to Irkutsk.

5th. Ierodiakon Stefan (also a former officer) was drowned in the suite of the bishop.

6th. The archimandrite Ierodiakon Nakar returned to Irkutsk in 1806, and died there eight years later.

7th. The monk Ioassaf died at Kadiak in 1823.

8th. The monk Herman died at Kadiak in 1837—the last member of the Kadiak mission.

c Communicated to Veniaminof by Father Yakof.

The Atkhans believed that all the inhabitants of the islands known to them originated from one couple that came from heaven to the island named Tanaga, one of their group. The Atkhans, like their brethren of Oonalashka, believed in shamanism; that is, though they acknowledged a creator, they also believed in powerful spirits. The Supreme Being they called Konyndam Agongou and also Achidan Agongou; the first signifies creator of heaven, and the second creator of the lower regions; to intervene between mortals and spirits, and to decide which of them was to be most respected, was the business of the shamans. The demonology of the Atkhans was very complicated. They also believed in certain birds, fishes, and other creatures, together with the sun, the heavens, and other inanimate objects, thinking that spirits lived in them. As communication with spirits was carried on only through the medium of shamans, they imagined that these spirits looked as the shamans appeared during their ceremonies and dances, with masks or disguised countenances. Such masks and faces were still seen by the priest above mentioned. He says that they are generally well executed, representing the heads of animals in an exaggerated form. Some of the Atkhans ascertained that in certain inaccessible localities there were colossal beings of human shape, called Taigonligonk, to whom sacrifices or offerings were brought, consisting of paints, skins, pebbles, and fine sinew thread, but there was no open idol-worship, and even this approach to it was considered dangerous among the people. They believed that idols might occasionally be of assistance to those who had made them, but though they complied at a certain time with the wishes and demands of their worshippers they finally proved their destruction, and sometimes a whole family or tribe was annihilated for daring to visit the locality where the idol was kept, and therefore it was strictly forbidden to make such figures. But the shamans continued to foster the worship, and instances of the same have been discovered often since Christianity was introduced in the Atkhan district. Especially was this the case among the inhabitants of the island of Attoo, where the last secret orgies were held. Idol-worship was finally broken up by the priest during his visit in 1827. The Atkhans relate that on one of their islands, named Sagongamak, on a bay named Onsamkonkh, about half way up the mountain, there had been erected an idol by some shamans which destroyed at sight all who passed by. They all had seen it and knew that it destroyed their brethren, but they did not know where and how they were destroyed until finally one of them sacrificed himself for the purpose of ascertaining the place where the Aleuts disappeared. Having resolved upon his undertaking he went to the dreaded vicinity, taking with him his wife, whom he hid in the interior of his bidarka. Arriving on the spot he sat down his wife in a place of concealment and told her to watch him while he himself went on farther and camped; his wife saw that something emerged from the idol, proceeded toward her husband, killed him, and carried him off to a cave. She returned home and related the occurrence. The Aleuts at once collected in large numbers, proceeded to the idol and killed the spirit operating the same, and after that the bay was safe. They also said that about the year 1814 an idol was found on the island of Kanaga which gave signs of life; and in 1827 a similar discovery was made on Adakli island by two Aleuts, who saw the spirit come out of the cave. The first idol was destroyed by being broken up, but the second was killed with a gun and then shattered and burned.

The Atkhans also believed that the souls of dead people did not die, but separated from the body and lived, scattering everywhere, without any permanent place of abode. The Atkha shamans, as a rule, were men, but a few women have been known in the profession. According to the belief of the people the shamans had intercourse with spirits, and the power to summon them in cases of necessity; they foretold the future; they threatened those who showed them disrespect with various punishments; cured the sick, and assisted the hunters in their pursuits, etc., consequently the more prominent or skillful among them were held in considerable respect. For curing diseases or bringing good luck to hunters the shamans generally employed the roots of plants, and sometimes of dwarf willow and birch, pieces of which were considered as valuable gifts. If the prophecies or assistance of shamans proved successful they demanded from their clients offerings to the spirit most respected by them, while they themselves were satisfied with what their clients were willing to give. One of the common occupations of the shamans was the manufacture of masks and faces, and sometimes of charms and nostrums. They also superintended games and dances, composed songs, etc. For all such doings they had certain localities where no unclean person or woman was allowed to enter. In order to keep themselves and their belongings beyond the influence of any unclean being the shamans frequently washed themselves, their clothing, and their implements in the water of running streams.

The Atkhans, like their brethren of Oonalashka district, strictly prohibited the betrayal of secrets to other tribes as leading to quarrels, murder, and war. They also prohibited laziness, theft, willful abuse; to avenge a wrong even by the most violent means was not only considered praiseworthy, but an unavoidable duty; respect for parents and for the aged and gratitude to benefactors were considered virtues. To kill a man for cause was considered just and allowable. Such causes were a violation of the marriage-bed, a refusal to fight for the community, treason, or secret intercourse with other tribes. The punishment for these crimes was sometimes carried so far as to include the wife of the offender; but children, especially small children, were always spared. They had no general punishment for crimes; each one was supposed to deal with his own enemies. Theft was not suffered among them at all; a house in which theft or robbery had been committed was at once leveled to the ground and rebuilt in another place with certain ceremonies; then a shaman with a few other men entered the new building, burning certain herbs and going through various ceremonies, in order to find out the guilty one. It was believed that the ashes of the burned herbs would fly into the face of the thief. Once discovered, the guilty man was stripped and beaten. A very remarkable custom among the Atkhans is the "purification", which they call *ahag*. Sodomy, and too early cohabitation with a betrothed or intended wife, are called among them grave sins. The manner of purification was this: The offender desirous of unburdening himself selected a time when the sun was clear and unobscured; he picked up certain weeds and carried them about his person; then deposited them and threw his sin upon them, calling the sun as a witness, and, when he had eased his heart of all that had weighed upon it, he threw the grass or weeds into the fire, and after that considered himself cleansed of his sin.

The Atkhans, like other savages, did not know the value of their lives, and, therefore, in disasters they were easily overcome by their feelings and deprived themselves of their lives. Grief over the death of relatives—a son, cousin, husband, or wife, etc.—often led to suicide; but there were no examples of children depriving themselves of their lives from grief over the death of their parents, no matter how dearly they had loved them. This was probably considered as a law. It occurred also that men committed suicide from disappointment at the failure of an undertaking, fearing that they would become the laughing-stock of the village. Sometimes they preferred death to capture among their enemies, for all prisoners of war were slaves for the remainder of their lives.

The Atkhans allowed intermarriage between all relatives, with the exception of a brother to a sister, father with his daughter, and a son with his mother; and in case of the death of one brother the other was obliged to marry the widow. Marriage was contracted at ten years of age, the time when a boy was considered able to manage a bidarka and throw a spear, and consequently was counted among the hunters, while the girl was able to sow. Sometimes the parents betrothed their children to each other. As soon as such an engagement had been resolved upon the parents presented the children with household utensils, clothing, hunting-gear, etc., but the marriage was only considered as binding when the young couple had brought forth children. At that time it was the custom to present them with slaves; and the refusal of an offer was considered a great insult, for which the most severe measure of vengeance might be instituted, even to death. Men were allowed to have two or more wives, but only very few had more than two. They were very jealous of their wives, and adulterers were subjects of cruel vengeance, and this crime often led to intertribal wars. The love of parents for their children and of children for their parents was as exemplary as among the Oonalashkans. The parents managed their children strictly, teaching them everything necessary for their comfort without permitting them to follow their own inclination, even setting apart certain

hours when they might leave them temporarily. Brothers and sisters were not allowed to play with each other. For disobedience and trifling offenses the punishment was only a reprimand, but for a graver infraction of rules the children were made to fast a day or more. The parents were always willing to intrust the education of their children to relatives, or even strange people. It was also the custom to give away children for adoption, sometimes without consideration, but generally expecting some return. These adopted children were accorded all the rights of real children of their new parents.

The mode of burial differed in accordance with the social condition of the deceased. The nobles, the wealthy, or prominent, distinguished hunters were buried with special ceremonies. A corpse of this class was clothed in its best garments and deposited in a small structure of earth, ornamented as much as possible with mats and flowers; the deceased was seated with his knees drawn up to the chin; then the structure was covered over and closed. If the deceased had been a hunter all his hunting utensils were buried with him. The poor and common people were simply thrown into holes, but also in a sitting posture. Men who died at sea were generally eviscerated for the purpose of preventing decomposition. The entrails were burned separately. Relatives of the deceased individual killed slaves in his honor, or as proof of their love for him or their violent grief—customs observed by other American tribes. Near relatives of the dead continued a general lamentation for several days; during this time they fasted; they did not partake of meat or oily food such as fish-heads, and they kept themselves clean; and even husband and wife did not cohabit during the time of mourning. Those who were very much attached to the deceased, if they did not commit suicide during the first paroxysm of grief, often fasted almost to starvation, and frequently visited the place of burial to mourn and lament, giving away to the people large quantities of valuables in memory of the dead. When children died the parents did not weep, with the exception of cases where children died before having any teeth; in that case the father fasted ten days and the mother twenty. The wife at the death of her husband, and the husband at the death of his wife, kept a fast and lament for sixty days, beginning from the eleventh day after the death; but if the husband died or perished at sea the days of mourning and fasting were reduced by half. At the conclusion of the morning period the widows or widowers might contract a new marriage.

The government of the Atkhans was patriarchal and liberal. They had no laws or rules; customs and traditions were their only guide. They had hereditary tribal commanders, like other American nations, but their power was limited and conditional; they were only obeyed by those who chose to listen. Their power consisted principally in the office of selecting men to perform certain labor for the common welfare; to divide whales cast up by the sea, to collect the forces in cases of emergency, and act as leaders during battles with the enemy. But on such occasions it was necessary that they should conduct themselves bravely and be ahead of everybody; if one acted otherwise some "brave" was at once selected to replace him, and such individual was at once invested with all the prerogatives of a chief. Chiefs who displayed extraordinary cowardice were deprived not only of rank, but of their property.

Special days or periods of repose they did not know, but whenever there was any occasion for feasting, such as the arrival of strangers, the return of parties from long voyages, victories over an enemy, or uncommon success in hunting, a season of rejoicing was at once instituted. Their celebrations consisted generally of scenic representations, with songs to the accompaniment of drums; masks were also used at such times, and other ornaments according to the subject represented by the actors. Frequently shamanism entered into such solemnities; shamans were always present on such occasions, and were consulted in the shaping of masks or disguises. These festivities began and frequently ended with feastings. The fare consisted only of local products, all marine animals except the "killer" whale, all birds with the exception of the hawk, eagle, and gull. All fishes and all known berries and roots were consumed as food, but the most luscious morsel was a mixture of *sarana* roots and berries with blubber.

The Atkhans had also special games for evenings, during which personal encounters or trials of endurance took place. The contests sometimes were of songs, sometimes of dances, and, rarely, a rude kind of wrestling; formal challenges were sent and accepted on such occasions, and a failure to be ready at the appointed time was considered a disgrace. The whole proceedings were of a friendly nature, and were generally accompanied with feasting, always with songs and dances. In course of time abuses entered into this custom, and contestants and enemies made use of such opportunities to inflict injury upon each other. Open breaches of the peace and murder were of exceedingly rare occurrence on such occasions.

The Atkhans, as well as the Oonalashkans, maintain that there was a time when they all lived at peace with each other and with their neighbors, but subsequently quarrels broke out, and finally it became customary for inhabitants of different villages to attack each other and destroy houses and property. Only the permanent residence of Russians among them put an end to internal strife and murder, and the adoption of the Christian religion only changed their character, and united as brethren those who had formerly been engaged in strife. The bloodiest wars previous to the arrival of the Russians were carried on by the Atkhans with their neighbors of Oonalashka; the latter, being the more numerous, were generally victors.

They say that the first cause of war between them was the following occurrence: One of the Oonalashkans had married a native of Atka, and had a son by her, who, unfortunately, had only one hand at birth. At one time the relatives and brothers of the wife came to the village and stopped. The husband at this time was away at some distance; the uncles and relatives noticed their one-hand nephew, and began to make fun of him. They tied to his body an inflated bladder, or drum, and told him to dance. To the mother such sport, though perhaps innocent in itself, appeared an insult, but she did not exhibit her anger. The guests departed in peace, without suspicion of coming evil. When the husband returned she told him everything—that her relatives had made sport of their unfortunate son. The husband became very angry, and, collecting a few of his relatives, he set out at once to seek revenge. He carried out his intention very easily, as his former guests had no inkling of being pursued. This first errand of vengeance gave rise to continued hostilities between the Atkhans and Oonalashkans, and to a repetition of the first attack. The Oonalashkans, of course, considered themselves as insulted and injured, and in their turn attacked the Atkhans. In course of time it became impossible for members of the two tribes to meet without a bloody conflict, but the Atkhans suffered much more, because they were weaker; and, not daring to attack the villages of their enemies, they were obliged to watch their opportunities when the Oonalashkans were on journeys at distant hunting-grounds. These conflicts generally took place on Siguan, Amilia, and Amnkhla islands. The Oonalashkans, on the other hand, raided upon the Atkhans every year in numbers of from fifty to one hundred bidarkas. This was carried on to such an extent that the Atkhans were obliged to shut themselves up during the summer in secluded and inaccessible fortified places, but even then they were often besieged and compelled to surrender. The islands of Siguan and Amilia were generally the theater of war.

Though unable to return the attacks of the Oonalashkans, the Atkhans occasionally made war upon the Rat and Bear islands as far as Attoo, and only with partial success. They used the same weapons as the Oonalashkans—lances and knives. The prisoners, especially the males, were treated by the Atkhans with great cruelty, and those who were made slaves were fortunate indeed; the others were burned alive in fire, roasted on heated rocks, and beaten with straps.

The Atkhans, as well as the Oonalashkans and other tribes, believed, until the arrival of Europeans, that they were the only people in the world, and therefore the first appearance of the Russians created great consternation. All such acts of the Russians as were incomprehensible to them were ascribed to supernatural qualities, and in the early times the Russians were classed with spirits or with devils. This character was maintained by the Russians subsequently by their cruelties and violent treatment of the Aleuts. Any article

of Russian manufacture found upon the beach was considered as unclean, and was at once thrown into the sea or burned. At first the use of iron or copper was strictly prohibited by the shamans; but where there is a rule there is always violation of the rule. The Aleuts became more bold, and convinced themselves of the superiority of metals for spears and arrow-heads, knives, etc., and subsequently they became better acquainted with the Russians and their customs, and iron and copper became the most valuable objects in their eyes, though the belief continued that they were manufactured with the assistance of the devil.

DIVISION OF TIME.

The Aleuts had twelve months in their year, the eleventh of which was longer than the others, to complete the full year. Their seasons were:

Kanakh, winter; *kanikingga* (after winter), spring.

Sakoódakh, summer; *sakoodikinga* (after summer), autumn.

The milky way was called *inim sighidá*, from *sighidak*, *linia alba*, (from the navel downward).

Their months were as follows:

1. March—*Kadoogikh* (first month), or *Khisagoonakh* (when straps are eaten—starvation).
2. April—*Aglioóigikh khisagoonakh* (end of eating straps), or *Sadágán kagikh* (time for leaving houses).
3. May—*Ichikh khookh*, or *Chigum tugida* (month of flowers).
4. June—*Chagalílim tugida*, or *Chagaligim tugida* (month of breeding and hatching).
5. July—*Sadignam tugida* (when animals grow fat).
6. August—*Oognam* (or *Ulhnám*) *tugida* (warm month).
7. September—*Chugúlim tugida* (when furs are good).
8. October—*Kimadgim tugida* (hunting-month, when seals come from the north).
9. November—*Kimadgim kangin* (after hunting-month).
10. December—*Agalgúgakh*, or *Agalgálukh* (when seals are hunted in disguise).
11. January—*Tugidigámakh* (long month).
12. February—*Anulgíliakh* (eormorant month).

III.—THE ATHABASKANS.

The Athabaskans, or Tinnel, include a large number of tribes generally classed as "North American Indians", extending from the mouth of the Mackenzie river in the north to the borders of Mexico in the south. The northernmost tribes of this stock extend in a westerly direction nearly to the coast of Bering sea and the Yukon delta, touching the sea-coast at one point only in the northern part of Cook's inlet. At every other point they are separated from the ocean by a belt of Eskimo population. The reasons for adopting the term Athabaskan in preference to that of Tinnel have already been given.

Closely allied as these tribes are to our own well-known Indians of the interior, they will probably share in the fate of the latter, disappearing rapidly before the first advances of civilization, until scarcely enough may be left to accommodate themselves to the new state of affairs. While the Eskimo tribes of Alaska, especially those living to the southward of Bering strait, have the faculty of assimilating with races of a higher type, the Athabaskans of the far north have thus far displayed no traits which would warrant us to hope for their speedy civilization. The territory which furnishes the Athabaskan tribes, numbering a few hundreds, or perhaps thousands, with a scanty living equals in superficial area many of our states or territories. With the exception of the Tinnats or Kenai people, on Cook's inlet, these tribes have not been in direct contact with Caucasians until quite lately, and with the one exception before mentioned they have not taken kindly to the invaders of their vast domain. Nearly all the Athabaskan tribes of Alaska add to their tribal name proper the word *khotana*, *kokhtana*, or *tena*. A few tribes on the upper Yukon have the term *kutchin*, with the same meaning. It is very probable, however, that this *kutchin* may be traced to the same root as the above-mentioned *kokhtana*, and perhaps to the *khulchan* (*kolchan* or *golchan* of the Russians). The latter expression means "far-away people" with the natives of Copper river, and also with the Tinnats or Kenai people.

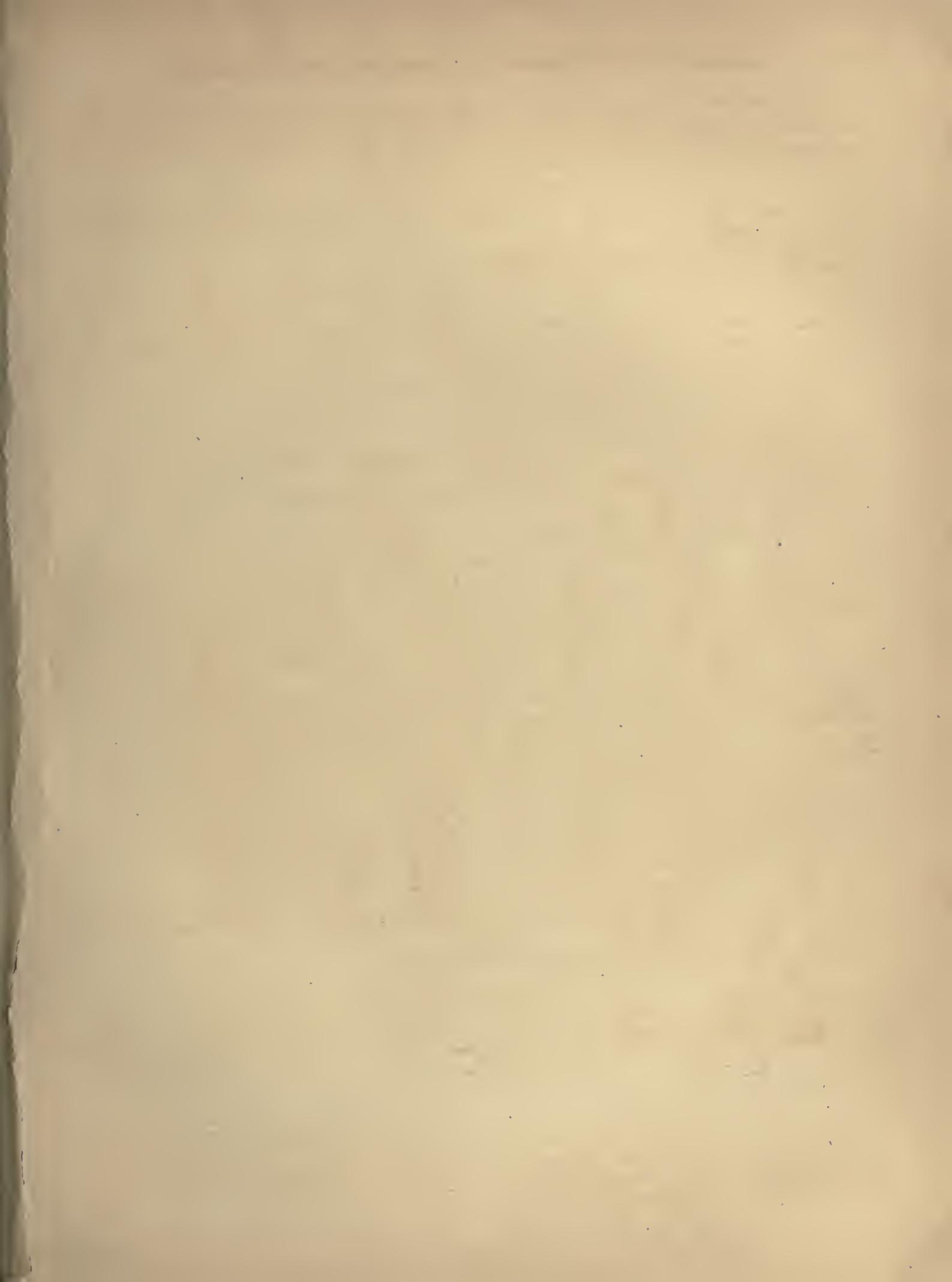
In enumerating the Athabaskan tribes of Alaska we begin with

THE NATSIT-KUTCHIN.

The Natsit-kutchin (Natsikkutchin of Dall, and Natchekutchin of Ross) are known to the traders as *gens de large*. The word *natsit* signifies strong. They are nomadic, not numerous, and occupy the banks of the Porcupine river, above its junction with the Yukon, and the country between the latter river and the Arctic divide. They are but little known, and carry on a traffic with the Kangualimute of the Arctic coasts. Their dwellings are rudely-constructed log shelters, and during the summer they live in tents.

THE HAN-KUTCHIN.

The Han-kutchin, living on the upper Yukon river, between the British boundary and Fort Yukon, embrace several of the subdivisions made by Mr. Dall, such as the Tutchonekutchin (Kolehane) and Nehamees. To traders they are known as *gens des faux*. They also lead a nomadic life, and trade with the natives of Copper river and those of the upper Tannahah river.





THE YUKONIKHOTANA.

This tribe, comprising the Yunakhotana and the Kutehakutchin of Dall, inhabits the banks of the Yukon river from fort Yukon westward to Nulato. The people are less nomadic in their habits than their eastern neighbors, but are by no means numerous. Their dwellings are built of logs and roofed with bark, and their summer garments are of tanned moose- and reindeer-skins, while those for winter use are made of reindeer-, wolf-, and fox-skins. They trade at various points along the Yukon, but prefer to assemble at Noyakakat and Nnkukaiet. Their tribal name signifies "men of the Yukon". The existence of totems among them has not been definitely ascertained, though we have many indications of their division into clans. In distinction from their neighbors of the west and north they do not use their dogs as draught-animals, but only for hunting. In winter and summer alike they carry such loads as they wish to transport upon their shoulders. They are, as a rule, tall and of spare habit. Their women are worn out and faded at an early age, having in true Indian style to bear most of the household burdens. They are polygamists, in spite of the fact that the males outnumber the females considerably in the majority of the settlements. They have no marriage ceremony, but the custom of purchasing wives, found among so many of the Athabaskans, does not exist among them. They are not copper-colored, being rather of an ashy hue, and they are less hairy than their Eskimo neighbors.

THE TENNANKUTCHIN.

The Tennankutchin (Mountain men), or Tennan-tnu-kokhtana (Mountain River men) as they are called by the Tinnats, occupy the mountainous basin of the Tennanah river. But few white men have penetrated into their domain, as they have always borne the character of a treacherous and warlike tribe. They number, perhaps, seven or eight hundred, living chiefly in villages near the headwaters of the river, which they descend during the summer in birch-bark canoes to trade on the neutral ground of Nuklukaiet, at the junction of the Tennanah with the Yukon river. Their common dress consists of moose-skin shirts and pantaloons for both sexes, the difference consisting only in the shape of the skirt of the upper garment, which is rounded with the females and pointed with the males. Both sexes are fond of bead and porcupine-quill embroidery. They paint their faces, and on festive occasions powder their unkempt locks with eagle-down, after the fashion of the Kaniagnite, in the far southeast. In summer the men wear no head-covering but a narrow band of skin for the insertion of feathers. The accompanying plate represents two individuals of this tribe, who were the first to visit the sea-coast, in the year 1880. They have been known to trade with the Kenai people in ancient times, and are reported to possess a system of totems.

THE YUNNAKAKHOTANA.

The Yunnakakhotana, first named by Zagoskin, inhabit the Koyukuk river, the northern tributary of the Yukon. Their name signifies "far-away people", and was probably given to them by their southern neighbors, but Mr. Dall calls them Koyukokhotana. Zagoskin is the only white man who has ever visited them in their homes. He made a winter journey along the river and across the divide to the headwaters of Selawik river, which empties into Kotzebue sound. He describes them as living in small communities of one or two log houses widely scattered. The Yunnakakhotana trade alternately at Nulato on the Yukon, and with the Eskimo of Kotzebue sound. Mr. E. W. Nelson reports that he saw natives belonging to this tribe on the coast of Kotzebue sound, who had mixed with their Eskimo neighbors to such an extent as to have adopted their language while still retaining their distinctly Athabaskan physical features.

Misled, probably, by his imperfect knowledge of the Russian language, Mr. Dall has mentioned Zagoskin (and upon his authority Wrangell and Baer) as classing these people with the Innuit or Eskimo. In this he is mistaken, as Zagoskin drew a very distinct line between his Tinnai and the Kngyulit or Eskimo everywhere, locating the boundaries between the tribes with remarkable correctness.

THE KAINIKHOTANA.

The Kainikhkhotana, comprising the people of both banks of the Yukon from Nulato down to Paimute (the eastern boundary of the Eskimo tribes on the Yukon), as well as the tribes living upon the banks of the Chageluk, Innoko, and Thlegon rivers, formerly classed as Ingash or Inkash, are the westernmost of the Alaskan Athabaskans, almost impinging upon the sea-coast at the headwaters of the Anvik river. The tribal name means "lowlanders". Like their eastern neighbors, the Kainikhkhotana live chiefly by hunting, and engage in fishing only to eke out scanty supplies. They live in permanent villages and make use of dogs as draught-animals, having adopted in addition many customs of their Eskimo neighbors on the west. In traveling on the river and on the lakes they make use of both the birch-bark canoe and the kaiak. The latter, however, is not manufactured by themselves but purchased from the Eskimo, who in their turn, as before mentioned, have adopted the birch-bark canoe for certain purposes. The Kainikhkhotana have also adopted from the Eskimo the frequent celebration of festivals and the rites of shamanism. Their dwellings are large and partly underground, with a superstructure of logs and sods. The kashga or council-house of the Eskimo is absent here, and festivals are held in the larger dwellings. No traces of the totemic system have been found. During one of their festivals, connected in some way with hunting reindeer,

which the writer witnessed on the Chageluk river, the following representation took place: Two men, who had been donning their costumes behind a screen of deer-skins, suddenly appeared in the center of the house, the sides of which were lined with spectators. One man was attired in a fantastic hunting costume, richly ornamented with beads, fringes, and tassels, and wearing a band around the head studded with eagles' feathers, and with bow and arrows in his hands. The stuffed skins of several animals and birds were drawn forth from some corner in rapid succession by means of strings, and as each animal appeared the hunter made an attempt to kill it. Every attempt, however, was foiled by the other man, who was dressed up in imitation of a raven, with the appropriate mask and with wings fastened to his arms. With these wings he would spoil the hunter's aim, and then hop about, imitating admirably the awkward jumping of the crow, while he kept chattering away in derision of the awkward hunter. This was kept up for some time, until a shaman or sorcerer appeared upon the scene, dressed up in a long hunting-shirt nearly covered with strings of bears' claws, eagles' beaks, beads, etc., and with rattles in both hands. The shaman pressed upon the hunter the acceptance of a charm or amulet, for which he received in payment nearly everything the hunter had about him. Then the animals began to appear again, the hunter slaying them one after another without any further interference from the raven. It was evidently unnecessary to look for any deep meaning in this performance, as it was only the shaman's advertisement of his charms and services pure and simple. In such festivals as are celebrated in memory of the dead the performances are more varied and of greater interest.

The Kainkhkhotana, like most of their Athabaskan neighbors, deposit the bodies of their dead in boxes raised on posts somewhat above the ground. Flags and streamers of white cotton are frequently attached to these structures. The burial-places are generally located upon some prominent bluff overhanging the river, where the graves can be seen from a distance.

THE KHUILCHAN.

The Khuilehan, or Kolehane of the Russians, occupy the vast interior mountainous region bordering upon the upper Knuskokvim, the divide between the latter river and the Tennenah in the north, the main Alaskan range in the east and south, and the country of the Nushegagmuite in the west. They are nomads, roaming about at will from river to river, and from one mountain chain to another, selling their skins at the trading-posts nearest their hunting-grounds. This last custom has given rise to an overestimation of their number, as the same tribes have been accounted for as trading at three or four different stations. Their whole number at present probably does not reach 200. The many traditions of their treacherous and warlike character handed down to us by the Russians may safely be looked upon as fabulous. Living as they do, they could never have been a numerous people or the cause of danger to their neighbors. It is said that they have some permanent villages on the headwaters of the Knuskokvim, but no white man has ever beheld them. Such of the women as have been seen at the various trading-stations were of repulsive appearance, and gave evidence of a life of hardship and abuse. The Khuilehan use birch-bark canoes, and do not make use of the dogs as draught-animals.

THE TINNATS- (OR KINNATS) KHOTANA.

The Tinnats-khotana (Kenaitze of the Russians), named Tehaninkutchin by Dall, are the only tribe of Athabaskans occupying any portion of the sea-coast in Alaska. They came into contact with the Russians at an early date, but were subjugated only after much fighting. As early as 1789 permanent trading-stations were established among them on the coast of Cook's inlet by the Russians, and from that time they have been nominally Christians. Their regular missionary station is now located on the mouth of the Kaknu river. The settlements of the Tinnats-khotana extend from Kuchekmak gulf on the Kenai peninsula around the inlet northward and westward, including the valleys of the Kinik and Sushetno rivers, and reaching to the great lake of Ilyamna, and down to the vicinity of cape Donglas, where the Kaniagnute territory begins. The Tinnats-khotana are taller than their Eskimo neighbors; their skin is a shade or two darker, with the exception of those living in the neighborhood of former Russian settlements, where they have intermingled with the invaders. Their women are generally much more prepossessing in personal appearance than those of the other Athabaskan tribes of Alaska. In the coast settlements their mode of life has been much changed. They have adopted to a great extent the customs of the semi-civilized Kaniagnute and creoles, but in the interior, especially in the Sushetno and Kinik valleys, we find them still dressed in deer-skin shirt and trousers, men and women alike; a practice clearly indicating their kinship to the northern Athabaskans. Many of their garments are tastefully embellished with porcupine-quills, beads, and grass plaiting. The ears and noses of the men are pierced for the insertion of pendants of dentalium or hyqua shell, this being almost the only section of the territory where the trader still finds a steady demand for these shells. In the interior these people use the birch-bark canoe exclusively for coast voyages and for the purpose of hunting the beluga; purchasing the bidarkas they use from their Eskimo neighbors. They build their permanent dwellings of logs. These logs are so fashioned that the under side, hollowed out, fits down tight, almost air-tight, upon the rounded surface of the timber next below. Some of their houses are from 15 to 20 feet square, and have regular rafters, giving a pitch to the roof sufficient to shed rain and melting snow. The covering of the roof is the bark of spruce trees. The fire-place is in the center, with a smoke-hole directly above it. The entrance to the house consists of a low, square aperture scarcely large enough to admit an adult person. The floor

consists of the natural earth trodden hard, and along the sides of the inclosure are rude platforms, erected a foot or two from the ground, covered with grass mats and skins, and serving as sleeping- and lounging-places in the evening. In the houses of the well-to-do hunters we find wings or box-like additions to the main building, tightly framed and put together, opening into the main room. These little additions are furnished with the luxury of a rough plank floor, and in many instances with a small window covered with fish-gut. They are used in winter as sleeping apartments, and as reception-rooms during visits of ceremony, and also as bath-rooms, being heated during the winter with hot stones carried in from the fire outside, thus enabling the natives to dispense with clothing during the night, which they consider a great luxury. Wherever the Tinnats-khotana are under the influence of the Russian mission they bury their dead under ground, but in more remote settlements we find the bodies deposited in boxes set upon posts, as before noticed in speaking of other Athabaskan tribes. The bodies of chiefs and prominent persons are frequently placed in a structure resembling a small house with door and window, and gifts are deposited at graves and burial-places. At the death of a chief it is the custom to carry all his belongings into the hut that shelters his remains. In the vicinity of Toyonok I saw such a burial-house nearly filled with articles most valuable in the eyes of the natives, among them several Russian *samovars*, worth from \$50 to \$60 apiece, breech-loading arms, rifles, large numbers of blankets and deer-skins, richly-ornamented garments, etc. The deceased who had been thus honored was a Christian, and not long after my visit the Russian missionary proceeded to the burial-house and carried off all articles of value and sold them at auction for the benefit of the church. No opposition was made at the time to this summary proceeding, but it is very probable that the resentment naturally caused thereby in the hearts of the natives will rankle there for years, until some opportunity presents itself for vengeance. The men of this tribe are of a taciturn disposition, but they are indefatigable hunters, and spend most of their time in the chase of fur-bearing animals and game, making long journeys into the interior through the mountain defiles and over passes, nearly always on foot, using their birch-bark canoes chiefly for crossing rivers and lakes. They build along their routes of travel here and there temporary shelters or sheds open in front, with sloping roof, thatched with grass. Each traveling individual or party, on leaving such a place, deposits in a certain nook a small bundle of dry moss, birch bark, resin, or twigs, to enable the next comer to kindle his fire without difficulty. This hospitable and thoughtful custom is never omitted.

The Tinnats-khotana also have their festivals and dances on certain occasions, during which presents are given away to those who attend. The giver of the feast alone appears masked and dressed up in fanciful costume. The *modus operandi* of one of these festivals, celebrated on the occasion of a beluga-hunt at the village of Chikituk, was as follows:

The invited guests who were to participate in the feast arrived in canoes late in the afternoon, and were received on the beach by the chief of Chikituk, accompanied by nearly all his people chanting a song in slow measure. The guests took up the song, and both parties walked up to the village, the hosts carrying all the baggage and belongings of their visitors. The party proceeded at once to the house of the chief, where they were entertained hospitably during the remainder of the afternoon. Etiquette did not permit a single question to be addressed to the new-comers until they had satisfied their appetites. The greatest delicacies, berries preserved in rancid oil, beluga-blubber, dried moose-nose, and fish-spawn were pressed upon them without a word and partaken of in silence. At last their hunger was appeased and conversation began, which was kept up until darkness had set in. Then the chief retired into a corner of the apartment, and with the aid of his two wives attired himself in his best costume, consisting of an immense hat trimmed with bears' claws and beads, and a loose robe of white cotton richly embroidered with beads. In his hands he had rattles, inflated bladders filled with pebbles. He advanced to the center of the room and began to dance, two of his sons chanting and beating time with sticks. The measure increased in rapidity as the dance proceeded, involving a corresponding change in the movements of the chief, who wound up his performance with the most violent contortions. When he was thoroughly exhausted he ceased dancing, and threw upon the floor a number of articles he wished to give away. The spectators, excited by the song, also produced gifts and threw them upon the others. The whole was then distributed among those present in accordance with the directions of the oldest woman present, the chief lifting up each article and the woman calling the name of the person who should have it. After this the chief changed his costume four times, performing as many dances, and after each there was a distribution of presents. This ceremonial was kept up for three successive afternoons, until the hunters departed on their journey, chanting a canoe song and keeping time with their paddles.

The Tinnats-khotana, though nominally Christians, still observe many of their old customs, one of which is the driving away of evil spirits from the body of a dying person. I witnessed a scene of this kind in a village situated within a few miles of the missionary establishment. A woman was lying upon a wretched couch in her last moments, while her husband stood in the entrance or doorway of the house, loading and firing his gun, and shouting between the discharges at the top of his voice, accompanied by a chorus of yells and groans from the other members of the household, his neighbors joining. The action appeared to be cruel and savage, but the intention was good, being to frighten away the evil spirits from the dying woman.

The Tinnats-khotana have many traditions of gigantic races, living to the northward, who in ancient times invaded their territory, killing many people. One old man assured me that during the life-time of his grandfather

one of these giants came down from the mountains, and as he strode through the villages he would pick up an unfortunate individual in each hand, swing them by their feet, and knock their heads together, after which summary proceedings he would deposit them in the breast of his parka. It is of course out of the question that these savages should ever have heard how Polyphemus treated the companions of Ulysses. The same old man, in speaking of the tribes adjoining the Tinnats-khotana in the north, said that after crossing the mountains the traveler would first come to the Khulchan, who were cannibals, easily distinguished by a blue ring around the mouth caused by their horrible practice. Beyond this tribe lived the giants heretofore mentioned, and still beyond them a very small race of people, almost black, but exceedingly skillful in the use of bow and arrow. Beyond this dwarf tribe again there was only water and big fish, as big as mountains. One might almost imagine from this fantastic description that the Tinnats-khotana knew of the under-sized Eskimo of the Arctic coast and the whales in the Arctic ocean. Their superstitions with regard to the various smoking and rumbling volcanoes in their country are numerous. They do not like to approach such localities, and until the Russians settled among them the immediate vicinity of volcanoes served as a refuge for the reindeer, moose, and other game, which were never molested there. They tell of an eruption of the Ilyamna volcano, during which lava and rock in huge masses were thrown across the inlet, covering up whole villages with débris. It is of course impossible to locate with accuracy the time of this fearful eruption, but all along the eastern coast of Cook's inlet are yet found blocks of lava and conglomerate that invest the tradition with some probability. The natives also say that a pestilence followed this eruption, nearly destroying the people. This also we may believe when we glance at the large number of village-sites almost hidden from view under a dense covering of sphagnum growth.

The following are the names given by the Tinnats to other tribes:

Their own name: Tinnatz or Kinnatzkohktana.

Kaniagmute: Ultz-chna (slaves).

Chugachimute: Tatliakhtana.

Copper river: Otnokhotana.

Thlinket: Totkolinshok. [?]

Aleut: Takhayuna.

Alaska peninsula: Nieskakh-itina.

Prairie or tundra people: Ghuil-ehan.

Ilyamna people: Ktzialtana.

People of the sea-coast with long spears: Tutna.

Dog-drivers (in the north): Tyndsiuklitana.

Russian: Kaziakhtana (Cossack).

THE AH-TENA OR AHTNA-KHOTANA.

The Ah-tena (of Dall), a name signifying "big men", or Otno-khotana, as they are named by the Tinnats, occupy the whole basin of the Copper or Atnah river and its tributaries. Their permanent villages are located on the headwaters of the river, a hundred miles or more from the sea. They do not number over 300 all told. Their position is that of middlemen between the Eskimo tribes of the sea-coast and the Athabaskans of the far interior, their trading operations extending as far as the headwaters of the Yukon and Tannahal rivers. The men are tall, straight, and very active, with features resembling closely those of the typical North American Indian; aquiline noses are the rule among the Atnah people. The men do not possess any beard, or perhaps remove all hair from the face after the custom of other well-known tribes. The females of this tribe have not yet come under the observation of any white men who lived to describe them; two or three Russians who ventured to penetrate into the Copper River country were killed by the savages, and the only white man (a miner) who has made an attempt since the acquisition of Alaska by the United States, though suffered to reside in the lower Copper River region for nearly two years, was not permitted to visit the permanent villages or to ascertain the mineral resources of that region. The name of the river from which this tribe has taken its name is properly Ahnu, or "Big river," *tnu* being the word for river in their language as well as in that of the Tinnats. The party of Copper River natives who made their annual visit to the Nuchek trading-post in the year 1881 gave to me, as their tribal name, Ahtnu-khotana, or "Big River people". For the purpose of visiting the sea-coast these people purchase large skin-covered boats of the Chugachimute or of the traders. The return journey up the river is exceedingly difficult, as at two different points glaciers have crossed the river, making long portages over the ice necessary. The men claim that they must spend from three to four weeks on their return voyage. This assertion is probably true, as they abstain from purchasing any article of weight or bulk for the purpose of their trade, confining themselves entirely to beads, a few light packages of cotton prints, and tobacco. The beads are purchased by them only for the purpose of selling them again, as they do not themselves make use of any kind of bead ornaments. Their deer-skin garments are trimmed with porcupine-quill embroidery and fringes alone. They wear their hair long, either hanging loose or tied in a single scalp-lock at the top of the head. The accompanying plate represents one of these Atnah warriors, together with an individual from their nearest neighbors in the east, the Chilkhat Thlinket. For the reasons above

mentioned, nothing is known of their domestic life or their beliefs and superstitions. By the Eskimo of Prince William sound the Copper River people are called Yullit, according to the same authorities, but it is probable that this term signifies "one people".

IV.—THE THLINKET.

The Thlinket, numbering perhaps somewhat over 7,000 people, and inhabiting the coast and islands from the intersection of the one hundred and forty-first meridian to the southern boundary of Alaska, are perhaps the most interesting among the native tribes of the country from an ethnological point of view. The curious totemic system is more fully developed here than it has been found with any other tribe. The ties of the totem or clanship are considered far stronger than those of blood relationship. The principal clans are those of the Raven, the Bear, the Wolf, and the Whale. Men may not marry in their own clan, and children belong to the clan of their mother. The Thlinket are strictly confined to the sea-coast by the natural barrier of stupendous mountains that rise everywhere within a short distance from the shore along the whole length of their territory; hence they are emphatically a maritime people, skillful in the construction and management of their huge wooden canoes fashioned out of a single log. Nearly all their subsistence is drawn from the sea and from the rivers, with the addition of deer and mountain goat from the mountains. Their country is thickly wooded, and as a consequence their dwellings are large, being constructed of huge planks and logs, some of the latter of such dimensions as to make us wonder how these savages could handle them without mechanical appliances. In all the villages where the Thlinket live in their primitive manner totem-posts, from fifty to one hundred feet in height, rise up in front of nearly every dwelling, elaborately carved with the totem in all imaginable variations, and indicating in some obscure way the pedigree of the owner. The Thlinket excel in all manner of carving in wood, bone, or stone; they shape pipes, rattles, and masks with all fantastical forms, from the hardest material. The women are equally skillful in plaiting baskets from spruce roots split and soaked in water. The fibers are dyed in different colors and worked into tasteful patterns. In former times they also made a practice of weaving the long hair of the mountain goat into cloaks and blankets, in the most gorgeous colors and patterns, but since the introduction of woolen blankets and manufactured clothing this art has been neglected until now it is almost lost, but a few of these garments now existing as heirlooms in the more prominent families.

The Thlinket, like their near relatives, the natives of British Columbia, have always owned slaves, and the custom has not been abolished among them since their transfer to the United States. The slaves were always in the first place prisoners taken in war, and sold from one clan or tribe to another, but the descendants of these slaves also remained in the condition of their parents, liable to be given away, traded off, or even killed at the pleasure of their masters. The former custom of killing slaves on the death of a chief in order to furnish him with servants in the other world has become obsolete or exists only nominally, as for long years previous to the sale of the territory the Thlinket of Alaska were in the habit of accepting presents from the Russian authorities in consideration of releasing the intended victims of this practice. They resorted to the same extortion during the first year of American occupation, when the military commander at Sitka, with 200 or 300 soldiers at his back, was weak enough to comply with it, and to bribe the insolent chiefs into abstaining from murder. They think any insult or injury can be repaired by payment of money or goods. The murder of a relative can be atoned for by a certain number of blankets (their common currency since their first acquaintance with Caucasians); wounds and injuries are assessed in proportion; a refusal to marry a widow of an uncle or elder brother can also be settled by the payment of blankets; wars are frequently avoided by an indemnity arrangement, and they go so far in this system of compensation that they demand payment for losses from parties who have been in no way instrumental in causing them. For instance, an Indian of Sitka broke into the room of two miners in their absence, emptied a demijohn of liquor, and died in consequence, and the relatives of the robber demanded and received payment from the unfortunate Caucasians. If a man be attacked by a savage dog, and kills him in self-defense, he must pay for the dog to the Thlinket owner. A small trading-schooner, while running before a furious gale, rescued two Thlinket from a sinking canoe, which had been carried to sea. The canoe was nearly as long as the schooner and could not be carried or towed, seeing which the natives themselves cut the worthless craft adrift. When the humane captain landed the rescued men at their village he was astonished by a peremptory demand for payment for the canoe, backed by threats of retaliation or vengeance.

The observations of the priest Veniaminof, who labored patiently among the people in the cause of Christianity, and those of several subsequent explorers, are embodied in the following summary:

The tribe or race who call themselves Thlinket (that is, *man* in their own language), but who received from the Russians the names of Kalinshi, Koliushi or Kolosh, inhabit the coast of North America from Mount Saint Elias to the Columbia river, or from latitudo 60° to 45° north. The subject of my investigation, however, has been that portion of the race living north of the Nass river or of the British boundary. Veniaminof estimated the number of the whole race at from 20,000 to 25,000 living within the Russian lines, but the estimate was made in 1840, and if it was once correct a remarkable decrease in numbers must have taken place since.

The term Kolosh, applied to the Thlinket by the Russians, is not recognized by themselves. It is a term perhaps derived from the Aleut word *kaluga*, signifying a trough or wooden dish. When the first Russians encountered the Thlinket in the vicinity of Sitka the Aleutian hunters were struck with the remarkable lip ornament of the Thlinket women, consisting of a trough-shaped disk inserted in an incision of the under lip. In speaking of these

natives they probably described them as people with "kalugas", of which latter word *kalushka* would be the diminutive, and thus it is supposed the Russian name of the tribe originated. It is difficult to determine the authenticity of this derivation, as we meet in all sections of the former Russian colonies with provincialisms of Yakutish, Kamchatkan, and Aleutian origin. It is a significant fact, however, that the oldest authors on the subject used the term *Kalimshi* or *Koliushi*, while only the later writers adopted the word *Kolosh*. In Sitka at the time of the transfer of the country the ancient form had become altogether obsolete.

Hohberg noticed that in Sitka it was the practice to address a native with the word *shniaga*, and claims that this also had become a term signifying the whole race. The Russians claimed that this expression is of Thlinket origin, but this seems to me not supported by evidence. When a Thlinket addresses a Russian he also uses the word *shniaga*, which seems to signify "friend, or good friend, listen," or something equivalent. But as there is no similar word in the Thlinket language expressing the same meaning, we may surmise that the Thlinket adopted the word from the Russian, modifying it probably to suit their own idiom. The Thlinket themselves state that the term was adopted from the Russians; it is only too probable, therefore, that the word *shniaga* sprang from the Aleutian or some other native tongue of Alaska or Kamchatka. The Thlinket themselves adopt names from their principal places of residence, such as Sitkakhoan, Chilkhatkhoan, and Stakhinkhan—that is, people of Sitka, Chilkat, and Stakhin. Russians and other European nations with whom they have come in contact were named by them Knsskhakhoan, but to the Americans, with whom they always carried on a clandestine traffic in fire-arms and powder, they applied the name of "Whashtankhoan". As the roots of these two names we easily recognize the words Cossaek and Boston. The first word probably sounded at first Kussakekhoan. Among the Eskimo of the west the same word is in use as Kossage and Koshage.

The Thlinket tribe is divided into two branches or clans, the Raven and the Wolf family respectively. Their myths or traditions speak of two heroes or gods who at the beginning of time, through deeds of valor and supernatural power, proured for mankind the advantages and comforts they now enjoy, and to these heroes the Thlinket think they trace their origin. The names of these beings or demi-gods were Yesl or Yehl, the ancestor of the Raven clan, and Khenookh, the ancestor of the Wolf family. In spite of this theory of their origin, the raven and the wolf, considered as animals, do not take an important place in the Thlinket mythology. In discussing the mythology or beliefs of the Thlinket we shall find that Yesl (or Yehl) during his frequent transformations occasionally adopted the form of the raven, and in this way the name of the god may have come to be applied to the bird. It may have been the same with Khenookh, though the traditions make no mention of his appearance in the form of a wolf.

Both the Raven and the Wolf clans have many subordinate divisions. Thus in the Raven clan we hear of the Raven, the Frog, the Goose, the Sea-lion, the Owl, the Thlnku (a species of salmon), and in the Wolf clan the family of the Wolf, the Bear, the Eagle, the Porpoise, the Shark, etc.; and each of these subfamilies is again divided into branches in accordance with the locality occupied by it.

The Raven clan, which claims to have sprung from Yesl, the benefactor of mankind, enjoys perhaps the greatest respect, but the Wolf clan has acquired renown through its greater courage, large numbers, and successful warlike expeditions and heroic deeds.

The most renowned of the subdivisions of the Wolf clan is the Khawakhaslhan or Kokhanthan, living on the Chilkhat river, which formerly held but little intercourse with other clans and maintained a reputation for courage and ferocity. Each clan or family displays in every possible way the totem or coat-of-arms in the shape of some easily-recognized part of the animal or bird that has given the name to their division. We find such representations carved or painted upon canoes, utensils, blankets, shields, wooden helmets, and even on their horses; and on solemn occasions, during dances and feasts in memory of the dead, cremations, or other funeral ceremonies, we frequently find individuals dressed up altogether in the form of the totem of the clan.

Without reference to clan or subdivision all the Thlinket are divided into two classes, one containing the chiefs or the nobility, the other the common people. The chieftainship is hereditary in the families, but the authority connected therewith is entirely dependent upon wealth, which until of late consisted chiefly in the possession of slaves. The latter, if they belonged to the Thlinket tribe, formed a third class, as the children of a slave always remained slaves, but the majority of this class were originally prisoners, acquired by purchase or by war from other tribes to the southward, in the British possessions.

Veniaminov's opinion of the division of the Thlinket clans was that at the beginning only two families existed, the oldest and most prominent members of which were Yesl and Khenookh. Their children adopted the names of various animals, and still live together, though in separate houses. Each house was described by name in accordance with its position (on a hill, or on the shore of a river or lake); but when in course of time the descendants increased in number they were obliged to seek other dwelling-places, carrying with them, however, the name of the abandoned locality and the proud title of a "son of Yesl" or a "son of Khenookh". These names have descended to modern times, while the progenitors, whose memory is carefully preserved, were finally worshiped as god-like beings to whom the Thlinket owe all they possess of earthly happiness.

The traditions of the Thlinket unite in the theory of their common origin in the interior of the American continent, whence they migrated northward and westward until they emerged upon the coast of the Pacific in the vicinity of Queen Charlotte island. An apparent similarity between the languages of the Apache and Aztec tribes and that

of the Thlinket, and perhaps also of the Athabaskan tribes of the north, has been hinted at by many ethnologists and explorers since the days of Wrangell, who first called attention to the circumstance.

The outward characteristics of the Thlinket tribe may be enumerated as follows: The coarse, stiff, coal-black hair, dark eyebrows, but faintly delineated over the large black eyes full of expression, protruding cheek bones, thick, full lips (the under lips of the women disfigured by the custom of inserting round or oval pieces of wood or bone), and the septum of the men pierced for the purpose of inserting ornaments; beautiful white teeth, ears pierced not only in the lobes but all around the rim. To these may be added the dark color of the skin, a medium stature, and a proud, erect bearing (this only applies to the men). The hands of the women are very small, and large feet are rarely met with.

Before their acquaintance with the Russians the only clothing of the Thlinket consisted of skins sewed together, which they threw around their naked bodies without regard to custom or fashion. In addition to this they wore on festive occasions blankets woven out of the fleeces of mountain goats. From time immemorial they have possessed the art of dyeing this material black and yellow by means of charcoal and a kind of moss called *sekhone*. The patterns of these blankets wrought in colors exhibit an astonishing degree of skill and industry; the hat, plaited of roots, is also ornamented with figures and representations of animals.

By nature the Thlinket are indolent, those inhabiting the coast frequently living upon the refuse of the tide upon the beach that can be obtained without exertion. As long as they lived in their primitive state, and before the creation of artificial wants, the men of the Thlinket tribes were urged to exertion only by the rigorous climate, which compelled them to hunt fur-bearing animals and to use their skins as clothing. As their wants increased, however, they overcame their natural indolence, and now they labor faithfully and cheerfully for the sake of increasing their means of purchasing whatever takes their fancy.

The male costume is but little distinguished from that of the females; each wearing now (unless they have adopted the garments of civilization) one cotton shirt or garment reaching to the knees, a woolen blanket of various colors, white, red, green, and blue, and ornamented in front with rows of brass or pearl buttons. These blankets they wear much in the manner prevailing among the Indians of the United States and Mexico, throwing one end over the shoulder; occasionally the garment is tightened around the waist with a gorgeous belt. As a rule, the Thlinket of both sexes go barefooted.

Both men and women paint their faces black and red with charcoal or soot and vermilion (*einnabar*), which are their favorite colors. They are mixed with seal-oil and rubbed well into the cuticle; subsequently figures and patterns are scratched upon this surface with sticks of wood. The wealthy Thlinket paint their faces every day, while the plebeians indulge in this luxury only occasionally.

The men pierce the partition of the nose, the operation being performed in early childhood, frequently within a few weeks after birth. In the aperture thus made a silver ring is sometimes inserted large enough to cover the mouth, but the poorer individuals insert other articles, such as feathers, etc. They also pierce the lobes of the ear for the purpose of inserting sharks' teeth, shells, and other ornaments, while through the holes around the rim of the ear they draw bits of red worsted or small feathers. Veniaminof states that each hole in the ear was pierced in memory of some event or deed.

The ornamentation of the under lip of a female (now almost obsolete) marked an epoch in her life. When she came to the age of puberty the lip was pierced and a small cylindrical piece of bone or silver was inserted. As long as she remained single she wore this, but as soon as she was married a larger piece of wood or bone was pressed into the opening and annually replaced by a still larger one, the inner side being hollowed out. Old women could frequently be seen with such labrets two inches in diameter. It was of course impossible for these individuals to close their mouths, the under lip protruding, distended by the disk of wood or bone, in the most disgusting manner—the failure to close the mouth causing an incessant flow of saliva, and often offensive pus.

The Thlinket, like most of the tribes of the northwest coast of North America, may be called marine nomads, as they occupy fixed dwelling-places only during the winter, roving about during the summer in search of food for the winter. They derive their principal nourishment from the sea; a few roots, weeds, and berries forming luxuries only of the summer season. The sea that washes the shore is extraordinarily rich, not only in fish, but in all kinds of mollusks and algae. The ebb-tide bares the shore twice each day and leaves behind an abundance of such food in pools and on the rocks, enabling a Thlinket to pick up his dinner without much exertion. He consumes no kind of mollusk and consumes nearly every species of marine plant. His favorite articles of food are clams and mussels (*cardium* and *mytilus*), *echinus*, cuttle-fish, the roe of herrings, and all kinds of fish; the herring's spawn is collected together with algae, upon which it has been deposited, and preserved in boxes for the winter. This delicacy is not considered fit for the table until it has gone through a process of fermentation. Oil is pressed out of this preserved spawn of a higher and "finer" flavor than that of seal-oil. Of the cuttle-fish only the arms are eaten, and these are boiled until the slimy particles coagulate. In contradistinction from the Eskimo the Thlinket do not eat their fish raw; the cooking is now done in iron kettles, but in former times they used for this purpose water-tight baskets into which heated stones were thrown. The fish intended to be kept for the winter is not dried in the sun, as is done by the Eskimo, but suspended in the smoke of the house.

The larger marine animals, such as the seal, otter, and porpoise, are much hunted and furnish abundant food to the Thlinket, but the meat of the whale is held to be unclean, being despised by all the Thlinket as pork is by

the Jews, with the exception of the Yakntats living in the vicinity of Mount Saint Elias. This change in habits may have been caused by the vicinity of the Yakntats to Eskimo tribes, a supposition which is strengthened by the fact that the Yakutat females do not wear the horrible ornament in the under lip.

The Thlinket dwelling within the boundaries of Alaska live in fixed settlements, but in the summer they leave their villages and roam about at will, erecting temporary shelters with poles and bark wherever they remain for a time. The winter house is erected with great care and is frequently built strong enough to serve as a fortification against the attacks of other tribes. The height of the Kolosh or Thlinket house is from 6 to 8 feet, and consists of a parallelogram of heavy logs; rafters joined at an angle of 45 degrees and covered with bark form a roof. The entrance consists of a small aperture, generally circular, but occasionally square in shape, at some distance from the ground. Each of these apertures can be closed from within by a ponderous door. In the center of the roof there is a large square opening which affords an entrance to daylight and an exit for the smoke. A screen of planks is always placed on the weather side of this opening and shifted about in accordance with the wind. Immediately under the opening in the roof is a large fire-place sunk a little into the ground. The floors in the houses of the wealthy consist of plank, but commonly of the bare soil. On two sides of the interior of this edifice are partitions for storage of provisions and utensils, while in the background opposite the entrance there is a number of small box-like partitions serving as sleeping- and reception-rooms for individual members of the family. These latter apartments are not high enough to permit the inmate to stand erect, and rarely large enough to allow him to stretch out.

The Thlinket display the greatest skill in the manufacture of their canoes, each being carved out of a single log. The war canoes differ from those in common use only in size, the former being intended to carry from 40 to 50 people, while the latter do not hold more than 10 or 12. The shape is substantially the same, and all are ornamented in bow and stern with gaily-colored figures and carvings, the war canoes frequently bearing the totem of the owner. The handles of paddles or oars are also similarly ornamented.

Long before the first meeting of the Thlinket with the Europeans, and consequently before they became acquainted with the use of iron, they possessed the art of forging copper, which they obtained from the inhabitants of the Copper River region. A tradition exists to the effect that an old woman of Chilkat invented the art of forging, and that she was worshiped in consequence as a benefactress of her kind. For long years this art was a hereditary secret with certain families. Daggers and spears are now manufactured chiefly of iron. The dagger is very broad and has two blades, one on each side of the handle, the upper one generally much shorter than the lower, and the hilt is wound with leather thongs and provided with a long strap which is tied around the neck during combats to prevent the dropping of the weapon. Both blades have leather sheaths, also fastened to the person. This dagger is the inseparable companion of the Thlinket; wherever they go they carry it concealed under the blanket; in the market of Sitka, where they dispose of game and fish, they are seldom seen without it. The iron-pointed spear was used only in war and has been almost entirely superseded by fire-arms.

The greatest ingenuity is displayed by the Thlinket in their carvings in wood, bone, and slate, but chiefly in the manufacture of tobacco-pipes, cups, etc. This work is now done altogether with implements of steel.

In the modes of hunting a great change has naturally taken place since the introduction of fire-arms, and the sea-otter, formerly in the greatest abundance, is now almost extinct. Superstition interferes with an active pursuit of marine birds, as it is generally believed that the killing of the albatross and several other species causes bad weather. The bear was formerly rarely hunted by the superstitious Thlinket, who had been told by the shamans that it is a man who has assumed the shape of an animal. They have a tradition to the effect that this secret of nature first became known through the daughter of a chief who came in contact with a man transformed into a bear. The woman in question went into the woods to gather berries and inadvertently spoke in terms of ridicule of the bear, whose traces she observed in the path. In punishment for her levity she was decoyed into the bear's lair and there compelled to marry him and assume the form of a bear. After her husband and her Ursine child had been killed by her Thlinket brethren she returned to her home in her former shape and narrated her adventures. Ever since that time women, on observing tracks of a bear, at once begin to speak of him in terms of greatest praise, and continue in this strain until they are "out of the woods".

Of greater importance than the chase, perhaps, is the fishery of the Thlinket. The herring catch is conducted in the following manner: A pole about 10 feet in length is armed with iron points or nails at one end, at intervals of an inch from each other; the Thlinket fisherman propels his canoe into the midst of a school of herrings and beats the water with his pole, bringing forth a herring transfixed by each iron point at nearly every stroke. The canoe is speedily filled in this manner. The halibut is caught in very deep water with wooden hooks pointed with iron or bone, the line consisting of kelp. A small fish named ssakh (the eulachan or candle-fish), the oil of which is very highly prized by the Thlinket, is caught in baskets. A Thlinket chief, when asked whether these baskets were their own invention or introduced from abroad, related the following story:

A long time ago there lived on Thlamshashakian (Cross sound) a Thlinket named Khakhekhuthe, who with three companions undertook a long voyage in his canoe. They could not make a landing at night, and laid themselves down in the bottom of the canoe to rest. Khakhekhuthe lay with a paddle under his head, and dreamed that various birds were flying about him, screaming. He seized a paddle and struck about, and at every stroke a bird fell. When he awoke he found his companions dead in the boat, so that he was compelled to return homeward alone. Here again a sorrowful spectacle met his eye. All his people and all the inhabitants of the place

had died during his absence. Then he concluded to go in search of people at some other place. On his journey he arrived at a river, the mouth of which was full of small fish. While deliberating on the best way of securing some of these fish without hook or line he invented a basket of pliable willow twigs, and this art was transmitted to all the Thlinket he met.

This is the trivial ending of a promising tale transmitted to us by Holmberg.

The marriages of the Thlinket are without any religious ceremonies or observances, but a very strict rule exists preventing the contraction of marriage within one and the same clan; or, in other words, a Thlinket of the Raven clan must marry a wife of the Wolf clan, and *vice versa*. Polygamy is universal, especially among the wealthy, but the first wife always preserves a supremacy over the others. Veniaminof stated that he knew a chief on the Nass river who had 40 wives.

When a Thlinket youth has selected a maiden to his taste he sends a middleman to the parents or to the nearest relative of the woman; if the answer is favorable he sends to the future father-in-law as many presents as he can buy, borrow, or steal, and then proceeds to the spot in person. The father of the betrothed invites for a certain day all the relatives of the bridegroom, as well as his own, and when all the guests have assembled the young man advances to the center of the floor and seats himself with his back to the door; the guests then begin a song, accompanied with dances, in order to coax the bride from her hiding-place in some corner of the room. After the song, which is composed only for this occasion, is finished the floor is covered with cloth, furs, and other articles of value from the hiding-place of the bride to the seat of the groom, and the maiden in festive array is led over this costly pathway and seated beside her intended.

During this and all the subsequent ceremonies it is of the greatest importance that the bride shall not raise her head, but keep it in a bent position. Dances and songs follow, which are participated in by all present except the young couple, and when the dancers are tired, refreshments are served to all except the bride and groom; as in order to secure good fortune the latter are obliged to fast two days. When this period has elapsed they are furnished a small quantity of food, but this meal is followed by another fast of two days, and only after four days of fasting are they allowed to remain together, but the marriage is not considered accomplished until four weeks have elapsed. If the bridegroom is rich he gives a similar feast at his own residence, and when the festivities come to a close he is at liberty to live with his wife's parents or at his own home. In the latter case the bride receives a dower equal in value to the presents made by the bridegroom. This marriage can be dissolved at any time by mutual consent, but in that case the presents and dower must be returned. If the man is dissatisfied with the woman he can send her home, returning the dower without any claim for a return of his presents, but if the woman proves unfaithful the man has the right to reclaim his presents and to send her away without her dower. In all such cases the children remain with the mother.

Veniaminof states that among the Thlinket, as well as some of the people of Kadiak, the married women are permitted to have what are called "legitimate lovers" or "assistant husbands", who are maintained by the wives and enjoy marital rights only in the absence of the original husband. At all other times they act as servants, carrying wood and water and providing food. Among the Thlinket the office of vice-husband can only be filled by a brother or near relative of the husband.

After the death of the husband his brother or a son of his sister must marry the widow, and a neglect of this rule has frequently caused bloody wars. If no such relative of the husband is in existence the widow has the right to select another from a strange clan.

If the seducer of a wife escapes the dagger of the husband he must buy the forgiveness of the insulted man; but if the seducer is a relative of the husband he must at once assume the office of "assistant", as described above, and contribute his share to the support of the woman. The lot of the women among these savages is not to be envied; they are treated with the greatest cruelty before as well as after marriage. The special suffering imposed upon all women by nature is increased here a hundredfold by ancient custom and superstition. At the time of child-birth, when women more than at any other time are in need of assistance, the Thlinket females are driven out of the house and left to their fate, shunned by everybody as unclean. The child is born in the open air, no matter at what season, and only some time after the birth is the mother allowed to enter a rude shed, erected for the purpose, where she is confined for ten days.

Holmberg relates the following:

When I was on the point of departure from Sitka for California, at the end of December, 1850, I was detained for several days by bad weather and contrary winds, the ship being anchored directly opposite the Thlinket village. On several occasions I noticed a heart-rending cry of distress from the hills back of the village, and upon inquiry I learned that these were the cries of several women about to give birth to children, and who had been driven forth from their homes. There they lay during a violent storm of rain and snow, deprived of all assistance.

A new-born child is not allowed to taste its natural food until it has vomited, and if this does not occur naturally its little stomach is pressed and squeezed until the desired effect is secured. At the age of a few weeks the babe is wrapped in furs and strapped upon a board, and is always carried about by the mother. The infants are given the breast from ten to thirty months, but they are accustomed to other food after they are a year old. The first strong nourishment given them is generally the raw blubber of marine animals, except that of the whale. As soon as the child begins to walk it is bathed daily in the sea, without regard to the season, which accounts to some

extent for the robustness of the body of the Thlinket after he has once passed the tender age. On the other hand, this custom explains the decrease in numbers, as only a comparatively small percentage of the children survive the ordeal. All the men of the Thlinket tribes preserve the custom of bathing frequently in the sea both in summer and winter.

Each Thlinket has one name from his mother and another from his father. The first is applied immediately after the birth by the mother or her relatives, and is generally the name of some distinguished ancestor of the mother. The other name is taken from a deceased relative on the father's side, but this is applied only on some festive occasion or during some great memorial feast. Such Thlinket as are unable to provide a feast of this kind remain without the second name. A wealthy chief has the right to apply such a name at the time of birth of a son, but in that case the son is bound in course of time to celebrate a feast in memory of the paternal ancestor after whom he has been named. If a father possesses a son who has distinguished himself the father is named after this son, as "the father of such and such a one". Holmberg relates that among the principal chiefs of Sitka there was one whose name from the mother's side was Shighakhnu, but during a great festival he received the name of an uncle, Kukhan; he was subsequently baptized and received the Christian name of Michael. As the most powerful and distinguished among the chiefs he ought to have had a distinguished son, and thereby derived the fourth name, but as he had no son the other Thlinket, in derision, called him after one of his dogs, and spoke of him as "the father of such and such a dog".

As soon as a young girl arrives at the age of puberty she is confined in a dark shed with not room enough to move about. For a whole year she has to remain sealed here, being regarded as unworthy to enjoy the light of heaven, and during the whole time she must wear a broad-brimmed hat, so that she cannot even look heavenward. Only the mother and a female slave have the right to bring food to her. It is easy to imagine the inexpressible misery this long imprisonment must cause. In the immediate vicinity of Sitka and other settlements, however, the Thlinket have reduced the period of seclusion to six, and in some instances to even three months. During the first weeks of this imprisonment the operation of piercing the under lip takes place. Female slaves are excepted from all such ceremonies and observances.

All observers and visitors at Sitka have noticed that the Thlinket women have a waddling, crooked, and sometimes even a limping gait, which seems all the more remarkable in view of the proud and erect bearing of the men. It would be a natural conclusion to ascribe this defect to this long period of imprisonment at a time when the female body is developing most rapidly; but we find the same custom to exist among Eskimo tribes, with even stricter rules, without causing a similar change in the gait and bearing of the women.

After the period of seclusion of a wealthy female Thlinket has expired the relatives provide a feast, during which the girl, richly clothed, is presented to the assembled guests, who have been feasted and treated to all the delicacies of the Thlinket cuisine. The female slave who assists in dressing the girl for this festivity generally receives her freedom, and the garments worn during imprisonment are destroyed.

The Thlinket consider corporal punishment as the greatest disgrace that can be inflicted upon a free man, and consequently they do not, as a rule, make use of it. On one occasion, however, it may be employed: when a boy refuses to bathe in cold water he is compelled by beating with a stick to do so; but this is looked upon not as a punishment, but as a means of hardening the body. Theft is in their opinion not much of a crime; and if a thief is caught he is only required to return the stolen article or pay its value. For murder the law is, "blood demands blood."

The wars of the Thlinket, now of rare occurrence, were either general or private in character. The general wars were conducted with great cruelty by means of ambush or surprise, and the captives were made slaves. Early English and American visitors to the Thlinket coast reported the existence of the practice of scalping, and that scalps were used on festive occasions to ornament the legs of the dancers. It is impossible to ascertain whether the Thlinket ever were cannibals, and nothing has been stated on this point by early explorers. Only the English Captain Meares, who sojourned for some time at Nootka sound, states that the natives there, who are closely related to the Thlinket family, acknowledged to cannibal practices.

When a Thlinket warrior prepared himself for a war he painted his face red and powdered his hair with the white down of the eagle. The last-mentioned decoration is always an indication of great solemnity in the undertaking.

The private wars consisted only of quarrels between subordinate clans or families, and occasionally such disputes were settled by single combat. In this case each party to the contest chose one fighting man from their midst; the two families or clans were drawn up in order of battle, while the two combatants, provided with thick armor made of moose- or bear-skin, and with wooden helmets, carved in the shape of the family totem, protecting the head. The only weapon used on such occasions was the dagger, and the contest was accompanied with dancing and singing on both sides. When peace was made an exchange of hostages took place, and it was the custom for the latter to eat for several days only with the left hand, the right having borne arms too recently. To each hostage two companions from the opposite side were assigned to watch him, and these companions had to be of equal rank with the hostage.

The Thlinket burn their dead upon funeral pyres, with the exception of the bodies of shamans or sorcerers, which are deposited in boxes elevated on posts. The dead slave is not considered worthy of any ceremony whatever; his corpse is thrown into the sea like the carcass of a dog. When a Thlinket dies his relatives prepare a great feast, inviting a multitude of guests, especially if the deceased has been a chief or a wealthy and prominent member of a clan. The guests are chosen only from a strange clan; for instance, if the deceased belonged to the Raven clan the guests must be from the Wolf clan, and *vice versa*. No certain time is set for the cremation or for the festivities; this depends altogether upon the magnitude of the preparations, and it frequently occurs that the corpse is in an advanced stage of putrefaction when the time arrives. Poor people, who are unable to defray the cost of such ceremonies, take their dead to some distant cove or bay and burn them without any display. When the guests have assembled and the pyre has been erected, the corpse is carried out of the village by invited guests and placed upon the fagots. The pyre is then ignited in presence of the relatives, but these latter take no active part, confining themselves to crying, weeping, and howling. On such occasions many burn their hair, placing the head in the flames; others cut the hair short and smear the face with the ashes of the deceased. The Thlinket of Prince of Wales island boast of torturing themselves in the most reckless manner at the time of cremation, slashing and tearing their arms with knives and beating and bruising the face with sharp rocks. When the cremation of the body has been accomplished the guests return to the dwelling of the deceased and seat themselves with the widow, who belongs to their clan, around the walls of the hut; the relatives of the deceased then appear with hair burned and cropped, faces blackened and disfigured, and place themselves within the circle of guests, sadly leaning upon sticks with bowed heads, and then begin their funeral dirges with weeping and howling. The guests take up the song when the relatives are exhausted, and thus the howling is kept up for four nights in succession, with only a brief interruption for refreshment. During this period of mourning, if the deceased had been a chief, or wealthy, the relatives formerly killed one or two slaves, according to the rank of the dead, in order to give him service in the other world. This is the only indication of the existence of a belief in a future life by the Thlinket. At the end of the period of mourning, or on the fourth day following the cremation, the relatives wash their blackened faces and paint them with gay colors, at the same time making presents to all the guests, chiefly to those who assisted in burning the corpse. Then the guests are feasted again, and the ceremony is at an end. The heir of the deceased is his sister's son, or, if he has no such relative, a younger brother. I have already mentioned that the heir was compelled to marry the widow.

The festivities of the Thlinket consist almost exclusively of singing, dancing, gorging, and a distribution of presents. The dance consists of very rapid motion and passionate action, according to the wording of a song or the significance of the feast. All the festivities I have thus far mentioned belong, with the exception of cremation, to the occasions of minor importance; of the same class are the festivities on the occasion of moving from one dwelling-place to another, which form a parallel to the house-warming of civilization; so also are the sorceries or incantations. This subject, however, will be more properly discussed with the religious views of the Thlinket. It sometimes occurs that dancing and singing are carried on without any apparent motive, and on such occasions imitations of the actions during the greater festivities are given, apparently with the object of keeping them fresh in the memory of the people by repetition.

The festivity in memory of a deceased relative is by far the most important celebrated among the Thlinket. They call it "to glorify the dead", and frequently monuments are erected during such occasions, not so much in honor of the deceased as in memory of the feast and its giver. However, as only the wealthy are able to celebrate such feasts, and the expense is exceedingly great, they are of rare occurrence. Guests are invited from many distant settlements, and all these must not only be fed, but also loaded with presents. It frequently happens that the giver of a feast thus squanders not only his whole possessions, but also the dower of his wife, the result being a life of the greatest penury for himself; but he is satisfied with the honor of having celebrated the memory of his deceased ancestor in a dignified manner.

Sometimes these festivities are confined to one family, sometimes a whole settlement is invited. Long before the period agreed upon arrives messengers are sent out near and far to call the guest from distant clans or tribes, not by name, but simply saying that all may come who wish to do so. Frequently women and children accompany the guests. The house designated for the celebration is cleansed as much as possible, or perhaps a new house is erected for the purpose, ornamented within and without with the totems of the possessor. When the guests arrive the feast begins with dancing and singing, lasting until the following morning; then comes the grand repast, of which only the guests, who always begin the festivities, have a right to partake. For many days and nights singing and dancing are only interrupted by eating, and the whole celebration continues as long as the giver of the feast is able to feed the visitors. On the evening of the conclusion of the ceremonies the host retires to a corner of the house accompanied by a slave, and there is adorned with garments used only on such occasions and kept as heirlooms in the family. These garments vary in the different clans, and consist chiefly of parts of the animal represented by the totem of the clan. This dress formerly was ornamented with sea-otter teeth, ribbons, strips of ermine-skin, etc. The slave who assists his master in dressing for this feast always receives his liberty.

As soon as the host emerges from his concealment in gorgeous array, surrounded by slaves, the whole assembly breaks out into the cry of the animal representing the family totem. (Holmberg states that in accordance with the

peculiar tone or inflection of his cry one or more slaves were killed.) Upon completion of this sacrifice the relatives of the host begin the traditional songs of their clan, singing of the origin of the family and the deeds of their ancestors. Then the host seats himself on the floor, and the presents intended for distribution are deposited before him. The distribution is by no means equal, the wealthy and the most prominent individuals receiving the greater number of presents of the greatest value, often consisting of slaves, while the poor have to be satisfied with worn-out blankets or even fractions of the same. This virtually ends the festivity, but frequently a repetition of the whole affair occurs in the next house, and so on until the whole settlement has contributed to the splendor of the occasion. As has already been mentioned, the giver of such a feast has the right to adopt the name of an ancestor on his father's side.

Another festive occasion must be mentioned, which also belonged to the more important feasts, and was intended to give social standing to children. Great expense in the shape of presents was connected with this feast, but at present it is rarely observed. It is very similar to those already described, differing only in a few minor ceremonies. No slaves were killed on these occasions, but on the contrary a number of them, equal to the number of children in whose honor the feast was given, were liberated. For this occasion a new house was erected with the assistance of the invited guests as well as of the people of the clan. All who participated in the labor, without regard to family, received presents, while at all other feasts only the guests were thus remembered. After singing and dancing and the distribution of presents the children were introduced one by one and subjected to the operation of piercing the ears. As soon as the awl was introduced and the puncture made all persons present gave forth a hissing sound, probably with the intention of smothering the cries of the children. After the operation presents were again distributed and a final repast indulged in.

Before turning my attention to the religious views and myths of the Thlinket I must say a few words of the unfortunate beings who were considered by their masters as merchandise, and given away or killed at their pleasure. The slaves of the Thlinket all sprang from prisoners of war (but frequently the prisoners of one clan were purchased by members of another), or they were born of female slaves. Though under the Russian rule wars among the Thlinket tribes became of rare occurrence, the number of slaves did not diminish. The supply was kept up by barter with the more southern tribes, and at that time a majority of the slaves belonged to the Flathead Indians of the British possessions.

The slave enjoyed no civil rights whatever among the Thlinket; he could not possess property, and if he acquired anything by labor or by gift it was still the property of his master. He could not marry without his master's consent, and very rarely was he allowed to do so at all. As already mentioned, slaves were killed on festive occasions or liberated. The liberated slave was invested with the rights of the lowest grade of the Thlinket, and was counted with the clan to which his mother belonged. This rule held good with the slaves from the British possessions, as there also the natives are divided into the Raven and the Wolf clans. Rarely an able-bodied slave was slaughtered on festive occasions, as he was looked upon as merchandise of the greatest value, difficult to replace. If an intended victim managed to escape or to conceal himself he was allowed to live, and might return after the conclusion of the festivities at the house of his master without incurring punishment. It frequently occurred that powerful chiefs assisted favorite slaves on such occasions to make their escape. The universal rule was, however, to select for the sacrifice only the old or diseased slaves who were more of a burden than profit to their masters. Of the honor of cremation after death the slave was deprived.

In the Thlinket mythology Yeshl or Yehl occupies the place of creator of all beings and things, and his power is unlimited; he created everything in the world, the earth, man, plants, etc., and assigned the sun, the moon, and the stars to their places. He loves mankind, but in times of anger he sends disease and misfortune. He existed before his birth; he does not grow old and does not die, and with the east wind the Thlinket receive tidings of his existence. His dwelling-place is at the place nearest where the east wind blows (called by the Thlinket *Ssannakhe*). The Thlinket locate this place about the source of the river Nass, which enters the sea near the British boundary. This locality is still called Nass-Shakiyeshl. Yeshl has a son, but his mother and the circumstances of his birth have remained unknown. The son loves mankind still more than his father, and it frequently occurs that he intercedes with the latter in his wrath, and supplies mankind with food. That Yeshl is the origin, the ancestor of the Raven clan, has been already mentioned. The life and deeds of Yeshl form the only thing in the shape of dogma in the belief of the Thlinket, and their whole moral code is comprised in the doctrine, "As Yeshl lived and acted, so must we live and act." There was a time when the world was not and man lived in the dark; at the same time there was a Thlinket who had a wife and a sister; the former he loved so much that he would not allow her to do anything; she sat the whole long day in her cabin, or outside upon a little hill, just as the Thlinket love to do now. She had always eight little birds about her with a bright red color, such as come up to this part of the coast from California, and are called *kun* by the Thlinket; and whenever she indulged in the most innocent conversation with any other Thlinket the birds flew away and thus informed the jealous husband. His jealousy, however, went still further; every time that he went to the woods to build canoes, in which art he was a great master, he placed his wife in a box, locking the same. His sister had several sons—it is not known by whom—but the suspicious uncle killed them all one after the other. As soon as he noticed that the nephew was approaching manhood, and perhaps cast his eyes upon his wife, he invited him to go fishing in his canoe, and as soon as they were at a distance from the shore he upset the canoe of the nephew, and thus got rid of a possible rival. At length the mother,

inconsolable over the loss of her child, walked along the shore weeping; she observed a number of large dolphins or whales passing by the shore, and one of them hastened to enter into conversation with the mourning mother. When he learned the cause of her sorrow he advised her to go into the water, pick up a small pebble from the bottom, swallow it, and then drink copiously of sea-water. As soon as the whale had left she followed his counsel, and the consequence was that in eight months later she gave birth to a son whom she considered a common mortal, but it was Yeshl. Previous to his birth the mother concealed herself from her brother. When Yeshl grew up to boyhood his mother made him a bow and arrow and taught him their uses. Yeshl soon became an expert and a successful marksman, so that no bird could escape his arrow, and as proof of his great skill it is narrated that the mother had a long garment made entirely out of the skins of humming-birds shot by the son. One morning when Yeshl arose he saw seated before the door of the hut a large bird with a tail as long as that of a magpie, and provided with a long strong bill with a metallic luster. This bird the Thlinket named *kutzghatushl*—that is, a crane who can reach heaven. This bird Yeshl killed and carefully removed its skin, which he put on himself, and immediately expressed not only the desire but the power to fly. He rose at once into the air and flew so far that he struck against the clouds with this bill with such force that he remained hanging, and only with difficulty succeeded in extricating himself from his disagreeable position. As soon as he had freed himself he returned to his hut, doffed the bird's skin, and concealed it. At another time he killed in a similar manner a gigantic duck and thereby procured for his mother the power to both swim and fly.

When Yeshl had grown up to manhood he heard from his mother of the crimes of his uncle and the sad fate of his brethren. He set out at once to revenge himself and soon reached the dwelling of his uncle, who was absent in the forest working. He opened at once the box in which his uncle's wife was confined, and the birds flew away. The uncle returned homeward in a great rage, but Yeshl sat calmly without stirring from his place. The uncle then called him out of the hut, led him into a canoe, and paddled out to sea to a spot where a number of marine monsters were sporting about. Here he threw him into the water, believing that he was rid of another enemy, but Yeshl walked along the bottom of the sea to the beach and rejoined his uncle. Seeing that he could not destroy his nephew by any common means, he ordained in his wrath that a flood should arise, and the ocean began to rise higher and higher, but Yeshl again crawled into his bird-skin and flew away to the clouds, hanging there with his bill until the flood had covered all the mountains, just touched his wings, and then subsided. Then he let go his hold, fell into the sea upon a bunch of kelp, and a sea-otter carried him thence to the shore.

The Staklin Thlinket tell this story somewhat differently. They say that Yeshl after his aerial flight fell down upon Queen Charlotte island, and, picking up pieces of the wood of the Douglas pine (called by the Thlinket *shlakh*, by the Russians *chaga*, of which the best canoes are made) in his bill, he flew all over the other islands, and wherever he let fall a piece of this wood, there this tree, which is highly prized by the Thlinket, grows now. It seems that he did not reach the island of Sitka, as this species of pine does not exist on the island.

From this period began all his journeys through the world, which are so rich in adventure that the Thlinket say one man cannot know them all. Once he recalled to life some dead boys by tickling their noses with hair; at another time he obtained the fish *ssakh*, by inciting a fight between a gull and a heron; but the most remarkable of his deeds was the creation of daylight on the earth. Up to this time the sun, moon, and stars were not yet placed in the heavens, but were concealed in three separate boxes by a rich and powerful chief, who guarded his treasures so well that nobody could touch them. When Yeshl heard of this he expressed a desire to obtain them, and how he succeeded is described in the following narrative:

The chief just mentioned had an only daughter whom he loved and pampered so much that she was not allowed to eat or drink anything until the father had examined the food or drink. Yeshl, aware of these circumstances, understood that it would be possible only to the grandson of the chief to obtain the light, and therefore he resolved to be born again by his daughter. This apparently difficult task was an easy one to Yeshl, who could assume any form he liked. Consequently he transformed himself into a blade of grass and leaned against the vessel out of which the chief's daughter was in the habit of drinking, and when, after due examination by the father, she lifted up the bowl to quench her thirst, Yeshl, disguised in the blade of grass, wriggled into her throat and was swallowed. The result was that in due time the chief's daughter was about to give birth to a child and her father spread a number of sea-otter skins on the floor to afford a soft couch, but all the efforts and assistance of servants did not seem to help in her labor. At last a very old woman led her out in the forest, and as soon as she had stretched herself on a couch of moss the birth took place. The grandfather was very much rejoiced over the birth of his grandson and loved him almost more than his own body. At one time Yeshl began to cry and would allow nobody to quiet him. No matter what they gave him—whatever was given to him he threw away and cried all the more, always pointing with his hand to where the boxes containing the heavenly lights were suspended. To give him these it was necessary to have the consent of the grandfather; however, as there seemed to be no end to his crying the old man gave him one of the boxes. Yeshl at once ceased his clamor and commenced to play with the box in great glee; gradually he dragged the box out of the house, and noticing that he was not very closely observed, opened the lid, and at once the stars were in the heavens and the box was empty. The sorrow of the old man over the loss of his treasures was inexpressible, but he never denied his beloved grandson. Yeshl soon after employed a similar ruse to obtain the second box, which contained the moon. At last he invaded the last box, the most valuable of all, in which the sun was hidden, but the old ruse would no longer serve his purpose. The grandfather remained inexorable. Then Yeshl began to cry and weep so hard that he could not eat or drink, and became seriously ill. At that the grandfather's pity was aroused and he gave him the box with the strictest injunction that the lid must not be raised, but as soon as Yeshl had the box outside he transformed himself into a raven and flew away with the box. On his way he heard human voices, but could not see the people because no light as yet illuminated the earth. He questioned the people whether they desired to have light; they answered: "You will only cheat us—you are not Yeshl, who alone can give us light." In order to convince the doubters Yeshl raised the lid of the box and at once the sun shone from the heavens in all its splendor. The men ran away, frightened, in all directions; some of them into the mountains, some into the woods, and some into the water, and all of these were transformed into animals according to their hiding-places.

The Thlinket were still without fire; those who had it were located upon an island far out at sea. Yesl proceeded to this spot with the help of his bird-skin, picked up a burning brand in his bill and hurried back, but the journey was so long that nearly all the wood burned up, and even the point of his bill was scorched. As soon as he arrived on the shore he let fall upon the earth the glowing coal that still remained, and the sparks were scattered over both wood and pebbles. From this time the Thlinket say both wood and stone contain fire, which can be obtained from the one by concussion and by friction from the other.

Fresh water was also not to be found on the islands and continent inhabited by the Thlinket, but on a small island a little to the eastward of Sitka there was a well guarded forever by a watchman named Khenookh, the original ancestor of the Wolf clan. Yesl again employed artifice in obtaining the boon of fresh water. He took as much as he could into his bill and then flew away to the islands and remained, letting fall here and there drops of the precious fluid. Wherever the little drops fell there are now rivulets and streams, and where the large drops fell, lakes and good large rivers were formed. The ruse employed by Yesl in stealing the water from Khenookh forms the subject of a separate tradition.

Khenookh is, in the mythology of the Thlinket, a mysterious person without beginning or end, wealthy, and more powerful than Yesl; he plays a prominent part in this water myth. He was a man as well as Yesl, and inhabited the island above mentioned. Even now the Thlinket say that a square stone-capped well with a stone cover exists on the spot. In the interior of the well they point out a narrow colored or striped line, which they say was not there from the beginning, but only since Yesl stole the water. The water of the well is said still to possess some curious qualities; if an unclean being washes his hands therein the water disappears from the well and rises on the sea-shore. The whole neighborhood is still called Khenookh-keen—that is, Khenookh's water—because at the time when Yesl, for the benefit of mankind, undertook his enterprise Khenookh guarded the well so strictly that he built his house over it and slept on the cover of the well. At one time Khenookh was paddling over the sea with his canoe, and meeting Yesl also in a canoe he asked him, "How long have you lived in the world?" Yesl replied that he was born before the earth was in its place. "But how long have you lived in the world?" asked Yesl in his turn. "Since the time," replied Khenookh, "when the liver emerged from the beach." Replied Yesl, "Then you are older than I am." Thus boasting against each other they gradually left the shore point, and Khenookh, desiring to display his strength and power before Yesl, took off his hat and at once there came up a dense fog. Profiting by this Khenookh turned away from his companion, out of his sight. Yesl became alarmed and began to call Khenookh by name, but he kept silent and concealed by the fog. When Yesl saw that he could do nothing in this terrible fog he began at last to cry and to shout. Then Khenookh came to him and said: "What are you crying about?" and with these words he replaced his hat upon his head and the fog at once disappeared. By this action he caused Yesl to exclaim, "You are more powerful than I am." Then Khenookh invited Yesl to his dwelling, and upon arriving there Yesl was treated to fresh water. This pleased him so much that he could not get enough. After the repast, Yesl began to relate his deeds and adventures, and though his tales were exceedingly interesting, and though Khenookh listened at first with the greatest attention, he finally sank into a profound sleep, unfortunately still stretched upon the cover of the well. Then Yesl had to invent another ruse. He stole out of the hut, killed a dog, and smeared the sleeping Khenookh with the blood. Then he shouted to the sleeper and said, "Arise, Khenookh, and look upon yourself, you have been bleeding from the nose." Khenookh awoke suddenly, half dazed, and rushed out of the house into the sea to cleanse himself. Then Yesl hastened to the well, lifted the cover, and drank his fill. After filling his stomach he took as much as he could into his mouth, transformed himself into a raven, and tried to escape from the cabin through the smoke-hole, but his wings caught on something and the returning Khenookh at once recognized his guest in the struggling raven. He made a fire and began to smoke Yesl. (The Thlinket think that the raven only turned black on this occasion, having been white before.) At last Khenookh grew tired, and Yesl escaped along the water to drop upon the earth as heretofore described.

As soon as Yesl had done everything for the welfare of the Thlinket he proceeded eastward to his home, the Nass-Shakiyeshl, which was inaccessible not only to human beings but also to spirits. It is said that in modern times a spirit attempted to reach the locality and was punished for his presumption by having his left side turned to stone. The mask of this same spirit, which was in the possession of the famous Chilkhat shaman, was miraculously infested at the same time, one side of the mask, which was originally of wood, being petrified. Yesl in his capacity of God also bears the name of Hashakhoon, a name which has been applied to the God of the Christians (the common expression for the latter term is *Mokh*, a corruption of the Russian *Bogue*). The Thlinket have a very great number of subordinate gods or spirits, called by them *yekh* (in plural *yakh'h*), whom the shamans or sorcerers (*ikhth*) invoke during their performances. Every sorcerer, and they are very numerous, has his special spirits who are at his command, in addition to a large number of others upon whose assistance he can count only on special occasions. These spirits are divided into *khiyekh* or *khinayekh*, that is, the superior spirits, and into *takhiyekh* (land spirits who live in the north), and *tekiyekh* (water spirits). The *khiyekh* are the spirits of the braves who had fallen in battle. They live in disguise and reveal themselves in the aurora; consequently a strong northern light is considered by many Thlinket a prophecy of war. The *takhiyekh* are the spirits of those who had died a natural death, and their home is called Takhankhoo. The road to this place is not the same for all. Those over whose death the relatives cry or howl but little is smooth and even, but those who receive their whole measure

of noisy mourning must walk over a swampy, wet road. The takhiyekh appear to the sorcerers in the shape of land animals, the tekiyekh in the shape of marine animals or fishes. In regard to the origin of the latter the Thlinket do not all agree. Some maintain that they are the spirits of the animals themselves. In addition to these each Thlinket has his own yekh, who attends him as his guardian spirit. When a man becomes wickedly inclined his yekh leaves him and sometimes kills him. The spirits seem to like cleanliness, as a rule, and they allow themselves to be conjured only with the sound of a drum, or another instrument which we have not yet described. This consists of a hollow wooden bird filled with small pebbles, so that every movement of the bird creates a rattling noise. This is used in all dances and songs.

The Thlinket believe in the immortality and migration of souls. The soul does not migrate into bodies of animals, but into other human beings, chiefly into relatives of the female line. For instance, if a woman before giving birth to a child sees in a dream a deceased relative, it is said that the latter's soul has gone into her; or if the new-born child resembles in any way the deceased, it is taken for granted that he has returned to earth and the child at once receives his name. A Thlinket who envies a rich or noble family may be heard to say: "When I die I should like to be born again in this family;" others exclaim, "O that I might be slain speedily, so that I might be born again in this world under better circumstances." The souls of those who are cremated are wholesome and comfortable in the other world, others suffer with cold, but the souls of those in whose honor slaves have been sacrificed will never need to wait upon themselves.

The traditions of the Thlinket also speak of a general flood, during which the people saved themselves in a huge flat edifice; when the water receded this craft stranded upon a submerged log and broke in two, when the water receded still more. From this it is said comes the difference in languages, as the people in one half of the broken vessel remained Thlinket, while those of the other half were changed into all the nations of the earth.

At the beginning of this flood a brother and sister were separated; the brother's name was Khethl, that is, "thunder and lightning;" the sister's name was Aghishanookhn, that is, "wife under the ground." In taking leave Khethl said to his sister, "You will never more see me as long as I live;" then he donned the skin of a gigantic bird and flew away to the part of the world which we call southwest. The sister, after the separation, ascended Mount Edgecombe, in the vicinity of Sitka; the mountain opened its summit and swallowed her. From this time dates the great hole at the summit of the mountain (the extinguished crater). Khethl kept his promise to his sister and comes annually to Sitka; the thunder is the noise of his wings and the lightning is the flash of his eyes. His favorite food consists of whales. The continuance of the sister's life in the interior of the mountain points to the origin of its volcanic nature. In the opinion of the Thlinket the earth, forming a disk, rests upon the point of a pillar nicely poised. This pillar is held in the hand of the humane Aghishanookhn, who guards and watches it in order that the earth may not fall and be submerged in the water; but at times, when the gods hating mankind battled with her for the purpose of obtaining possession of the pillar in order to destroy the inhabitants of the earth, the earth trembles, but Aghishanookhn is strong enough to defend her children.

From another source Holmberg obtained a variation of this myth concerning Mount Edgecombe. "No," he said, "I have never heard that animals came out of Edgecombe, but in a great hole at its summit there lives the bird *khunnakhatheth* [probably the name of the bird into which Khethl was changed], who, after seizing with each talon the whale rises into the skies, producing thunder with the beating of his wings and lightning with the blinking of his eyes."

Having thus discussed the myths of the Thlinket, representing as they do the different dogmas and historic traditions, as in a poetic dream interwoven with the darkness of fable, I now turn to the not less important subject of "shamanism", closely related to the former.

Sorcery or shamanism played an important rôle in the ancient history of all northern nations. Shamanism has existed among all of them, though in various forms and degrees, but their nature and character are always the same. We find in every nation of the world more or less superstition, that is, an inclination to explain by supernatural agency all that the mind is unable to grasp; but the particular kind of sorcery or shamanism referred to here belongs exclusively to the north. To explain the cause of this perhaps requires a very profound and searching insight into the physical and psychological condition of mankind in various climates, or perhaps it lies concealed in the magic darkness that envelops the sharply-defined characteristics peculiar to polar regions. It appears that both shamanism and magnetism have their center near the pole, and both are in their inmost nature unknown and mysterious. We can observe only their effects manifested as phenomena.

The words and actions of the shamans and sorcerers are considered as infallible by the Thlinket, who believe in them sincerely. Some shamans, it is not known why, prohibited the consumption of whale-meat, which is considered a great delicacy by all other coast tribes of northwest America. In order to be a shaman it is necessary not only to possess the power to have various spirits at one's disposal, but also to call them whenever the emergency arose. On these occasions the shaman twists, throws, and paints his body in the most unnatural manner. The object of such sorcery is not only to reveal the future, but to ascertain all that is hidden, and with the help of spirits to prevent or avoid misfortune and disaster. Shamanism is generally hereditary in families—that is, it is transmitted with all its mysteries and collections of apparatus, such as masks, drums, straps, etc., to the son or grandson of the shaman. However, the descendants of a shaman are not always able to follow in his footsteps, not possessing, perhaps, the power to call the spirits and to enter into communication with them.

A man who intends to prepare himself to become a shaman proceeds for a time into the woods, or to the top of a mountain, where he may remain undisturbed by visitors. Here he passes from two to four weeks, feeding only upon the roots of *Panax horridum* (called by the Russians *nezamainik*). The length of time depends upon the willingness of the spirits to appear. As soon as they come the most prominent among them sends a land-otter, in whose tongue the secret and power of shamanism are believed to be hidden, to meet the aspirant. On sighting each other they both stop, and the man kills the animal, exclaiming four times, "Oh!" in various keys. The otter then falls upon its back, the tongue protruding. This the shaman cuts off and preserves in a diminutive basket brought for the purpose. This talisman he conceals carefully from everybody. If it should happen that an unwashed being obtained this secret charm he would lose his reason at once. The skin of the otter is taken off and kept by the shaman as a sign of his profession, and the meat is buried in the ground. Owing to this tradition no Thlinket dared to kill a land-otter previous to the arrival of the Russians at Sitka, but of late years experience and avarice have overcome the superstition in this respect.

If the shaman, after a long seclusion, does not find himself able to summon spirits, he proceeds, still fasting, to the grave of a deceased shaman, passing the night with the corpse and taking one or two of its teeth into his mouth. If this last effort prove successful the shaman returns to his people half starved and much reduced in body, and as soon as he arrives his power and skill in sorcery are tested. The honor and power of a shaman depend upon the number of his spirits, and whose influence he caused to contribute to his wealth. Each shaman has his own spirits, and a certain name and certain song for each of them. On many occasions he meets with the spirits of his ancestors, which increases his power to such an extent that he is enabled to throw his spirits into other beings who refuse to believe in his powers. The unfortunates to whom this happens faint away and suffer terrible cramps or faint ever after; if a shaman becomes ill his relatives fast for many days in order to help him. His apparatus is kept in separate boxes, and for each spirit he has a peculiar wooden mask. The hair of the shaman is never cut.

As has already been remarked, the shaman is not cremated after death, but set by in an elevated box. During the first night the body is allowed to remain in the corner where the death occurred, but on the following day it is removed to another corner, and this is continued for four days, until the corpse has rested in every corner of the house. During this time all the inmates of the house must fast until on the fifth day, dressed in the full traditional costume, he is lashed upon a board, in the sides of which holes are pierced. Two bone sticks that were used by the shaman during his incantations are placed one through the hair and the other through the orifice in the partition of the nose; then the head is covered with a basket made of twigs, and the corpse is carried to the place of burial, which is always located on the shore. Whenever a Thlinket passes the grave of a shaman he throws down some tobacco into the water (formerly, of course, it was some other article of value), in order to earn with this sacrifice the favor and good will of the deceased.

The shaman's incantation is generally conducted as follows: On the day set for the purpose the relatives of the shaman who assist him, especially the singers, are not allowed to partake of food, and are obliged in addition to empty their stomachs, which they do by drinking tepid water and tickling the palate with a feather. The celebration begins with sunset and continues until the following dawn. All the Thlinket who wish to participate in the ceremony, men as well as women, assemble in the house of the shaman, which has been cleaned as much as possible, and begin their singing to the time of a drum. After the shaman has donned his professional apparel and covered his face with a mask he begins to run around the fire burning in the center of the house, twisting and moving his face with violent contortions to the beating of the drum, and until his eyes, which during all this run are always directed to the ceiling, are almost turned in his head; suddenly he stands still, looks upon the upper side of the drum, and utters a loud cry; the song ceases, and all eyes are bent upon him. In these ceremonies consist the whole art of the sorcerer. During the performances the spirits pass in review before him, appearing in various forms. Upon the appearance of each successive spirit the shaman changes his mask, that is, he dons the mask of the spirit with whom he communicates for the moment. Any words he utters during this ceremony are considered as inspirations of the spirit. At the conclusion of the ceremony the assembly is first treated to tobacco and then provided with food. These incantations only take place in the winter, at the time of the new and full moon; and are undertaken chiefly for the purpose of preserving the good will of the spirits toward the inhabitants of the settlement—to obtain their assistance perhaps in allaying an epidemic disease and transporting it into some hostile settlement. In addition to these grand occasions incantations are indulged in from time to time for the purpose of ascertaining the cause of sickness or misfortune, etc. The cure of diseases, however, does not depend so much upon the shaman as upon certain other individuals, who are called by the Thlinket *nakuzati* (derived from the word *naku*, which signifies medicine; the term might be translated physician or medicine-man), and in whose power it lies to injure or destroy other people.

The Thlinket name for—

- Russian people, is Kuskekhan (Cossack).
- Kadiak people, Kaiakwan.
- Clingach people, Knshek.
- Kenai people, Tisnakwan.
- Alut people, Tiakhakwan.
- Yakutat people, Tliakhaikli-kwan.

Sir James Douglas, governor of the Hudson Bay Company's domain in British Columbia, wrote as follows:

The most enlightened of the Thlinket tribes entertain rational ideas concerning their deities, while others invest them with irreconcilable qualities, such as boundless power, with an extreme simplicity that the most stupid can puzzle and deceive. Probably they have no clear and well-defined ideas on these abstruse points, which are not of a nature to attract their attention, and they merely repeat the tradition as it was received from their fathers, without scrutiny or comment of their own. The Thlinket believe in the existence of a Supreme Being, whose name is Yealth, and that he has a son named Yealth Yay, i. e., the Son of God. They also think that there is a malevolent being called Kosstahoshtekakah. Yealth wears the human form; he made the earth; then man was formed. A faint light afterward appeared, gradually growing in brightness until the stars were seen. Then the moon was made, and lastly the sun shone forth in all his glory. They think that all men are not descended from the same parent stock, but that Yealth traveled from country to country and made a new man in each, to whom he gave a new language, not through the exertion of miraculous power, but by the mere physical process of changing the position of the internal organs by giving them a good sound twist with his hand. When all things were finished he commanded man to do good and to commit no wickedness, while at the same time he urged them to retaliate for hostile attacks of other people, and return injury for injury. He added: "I am now going away, but my eye will be always upon you. If you live wicked lives you cannot come to me, as the good and brave only can live in my place." With these words he left the earth and has not since that time returned to it, and they do not know where he is at present. The Thlinket think that there is a future state of retributive rewards and punishments. After death the souls of men ascend through successive stages, rising one over another like the stories of a house, to the highest heaven, where they find a strong gate guarded by a giant who knows the name of every spirit that makes its appearance there. After proclaiming the name aloud he proceeds to question the spirit regarding its past life, and closes the examination either by receiving it into heaven or driving it back to the inferior stages, where it wanders about comfortless amid yawning gulfs opening before it at every step. The knowledge of these things has no perceptible effect on their conduct. They steal and cheat and lie whenever they feel an interest in doing so, without any visible apprehension of incurring Yealth's displeasure. They all admit that theft, falsehood, and robbery are criminal, but nevertheless have recourse to them without hesitation whenever it suits their purpose.

Polygamy is a general practice among them, and they keenly resent any unsanctioned misconduct of their wives, although they do not scruple to sell their favors for a small consideration. If unmarried women prove frail the partner of their guilt, if discovered, is bound to make reparation to the parents, soothing their wounded honor with handsome presents. A failure to do this would cause the friends of the offending fair one to use force to back their demands and to revenge the insult. It must not, however, be supposed that they would be induced to act this part from any sense of reflected shame, or from a desire of discouraging vice by making a severe example of the vicious; or that the girl herself has any visitings of remorse; or that the parents think her a bit the worse for the accident, or her character in any way blemished. Such are not their feelings, for the offender is simply regarded as a robber, who has committed depredation on their merchandise, their only anxiety being to make the damages exacted as heavy as possible.

Mr. A. Krause, an explorer connected with the Geographical Society of Bremen, relates an instance of unregenerated superstition that came beneath his observation under the very eyes of the Presbyterian missionary established among the Chilkhat tribe:

During the months of February and March uninterrupted bad weather interfered so seriously with hunting and fishing as to cause great scarcity of food. The people were alarmed; the two shamans made the most strenuous efforts to propitiate the evil spirits, fasting, dancing, and singing night and day. But all this was in vain—the weather did not change—and it was necessary to find a reason for this unusual misfortune. At last the wise men came to the conclusion that the bad weather was the consequence of the burial of a child's body by the missionary during the preceding autumn. Huge fires were at once lighted and little images burned to atone for the burial of the child. When this measure, also, met with no success in producing a change of weather, the missionary was urged and implored to reveal the burial-place of the child that had risen to such unexpected posthumous importance, and when he very unnecessarily refused to comply men and women searched the vicinity for many days.

The Thlinket tribes are now divided as follows:

1. The Chilkhaat tribe, of Comptroller bay, numbering 326.
2. The Yakutat tribe, on the coast from cape Yaktag to cape Speneer, numbering 500.
3. The Chilkhat tribe, living on Lynn canal, numbering 988.
4. The Hoonyah tribe, on Chiehagof island, numbering 908.
5. The Khootznahoo tribe, on Admiralty island, numbering 666.
6. The Kehk tribe, on the Kehk archipelago, numbering 568.
7. The Auk tribe, on the northern part of Admiralty island and Douglas island, numbering 640.
8. The Takoo tribe, on Takoo river and inlet, numbering 269.
9. The Stakhin tribe, on Stakhin river and Etholin island, numbering 317.
10. The Prince of Wales Island tribe, numbering 587.
11. The Tongas tribe, near British boundary, numbering 273.
12. The Sitka tribe, numbering 721.

To these must be added 788 Hyda, closely related to the Thlinket, living on Prince of Wales island.

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